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OUTDOOR RECREATION in the Upper Great Lakes Area

#89

FOREWORD

The Lake States Forest Experiment Station was one of the group of institutions that organized the seminar on research needs in outdoor recreation reported here. As a further contribution to formulating research in this new and important field we are publishing the proceedings of the seminar.

M. B. Dickerman

M. B. Dickerman, Director
Lake States Forest Experiment Station

Station Paper No. 89
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OUTDOOR RECREATION

in the Upper Great Lakes Area

Proceedings of a Seminar in Research Needs

May 11-13, 1961

7a.

The Lake States Forest Experiment Station* +7b
Forest Service, U.S. Department of Agriculture
M. B. Dickerman, Director

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*Maintained at St. Paul 1, Minn., in cooperation with the University of Minnesota.

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All of the participants for thoughtful preparation, vigorous discussion at the meeting, and for getting their papers to the committee in time for early publication.

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BACKGROUND AND OBJECTIVES OF THE SEMINAR

by James T. Morgan[1]

Some of you may recall the story of the well-dressed man who entered a crowded elevator and facing the group of total strangers said whimsically, "I suppose you are wondering why I called you together this afternoon." Perhaps some of this group are wondering too.

The volunteer committee that organized this meeting had no mandate or authority to do so. The impetus came from a feeling that forest recreation in this part of the continent is a subject needing research. Some work has been done and more is surely going to be done. The opportunities for productive research are perhaps not fully appreciated by those who could contribute, and moreover, those who are working on various phases of the problem aren't always aware of the efforts of others. It seemed reasonable to assume that a meeting such as this would help many of us to set our sights on getting answers to important questions. It would also make us acquainted with each other and perhaps influence more social scientists to take up the task.

The title for our meeting is very broad. What the committee first had in mind was an inquiry into forest recreation, primarily camping. Finding it difficult to put boundaries around the discussion in terms of ideas, they settled for a geographical unit called the Upper Great Lakes Area. In this area outdoor recreation ranges through the whole spectrum from urban parks to isolated wilderness. We are going to hear from people with interests covering the entire range.

Land managers in the Upper Great Lakes Area are hosts to a rapidly increasing, highly mobile throng of visitors. In general, these land managers are willing hosts but are unprepared. They are like the man with the lake cottage close to town who wonders how many unexpected guests will appear next weekend, what accommodations they will require, and how great will be the wear and tear on the property. Two other questions are uppermost in their minds: Will the guests go away satisfied, and how in the world can they continue to finance this scale of entertainment?

These questions are of vital concern to the forestry profession, as well as to others. They are also vital to the economic advancement of people in the forested area of the northern Lake States and much of Ontario. But foresters are not going to be able to provide all the information that they need. Our education and training are pointed at natural resources and only indirectly at people. Recreation involves planning for people more than for land. Here is a wide-open field for investigation by sociologists, geographers, political scientists, psychologists, and others.

This meeting may be unique in the mixture of interests and experiences represented. I hope that it stimulates more research by social scientists of many persuasions. Our proceedings will be sent to a long list of people who wanted to come but couldn't make it. Interest in our topic is widespread, but knowledge of research progress is not readily available. One of the objectives of this meeting is to establish a means of communication among workers in the field, perhaps through periodic reporting on work in progress. At the conclusion on Saturday we might consider our accomplishments and the need for other meetings in future years.

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[1] Chief, Division of Forest Economics, Lake States Forest Experiment Station.

In planning for this meeting, the committee has probably overlooked or failed to reach some people who are deeply interested in recreation problems in this area. I hope we hear from them so that we can get their ideas and send them copies of the Proceedings.

PEOPLE AND THEIR RESOURCES WITH SPECIAL REFERENCE TO NORTHERN WISCONSIN

by Douglas G. Marshall[1]

The value of resources cannot be denied. Two major categories are identifiable: (1) Physical, and (2) human. The wise development of human resources is a basic prerequisite to a wise development of physical resources. Moreover, the uniqueness of human resources must be recognized in the following ways:

1. Renewability is a costly process in time and money.
2. Human values are involved to a greater extent.
3. The development of physical resources depends on the type of human resources available.

The two types of resources must always be analyzed as an integrated whole.

The basic premise is a concept of balance--human resources in relation to physical resources. This can be labeled:

$P \leftrightarrows R$, where P = people and R = resources.

There are a number of possible relationships that can exist in the above formula:

1. Too many people, too few resources available.
2. Too many people, too few resources developed, but available.
3. Too few people, too few resources available.
4. Too few people, too few resources developed, but available.

Most areas of Wisconsin would fit into the (2) series, i.e., too many people for the resources that are developed, assuming that more resources are available for development.

The fallacy of too many people in relation to resources can become a vicious cycle of never developing resources, hence the argument that we have too many people. To follow this logic would mean actual depopulation of an area. In practice, this argument is quite sterile since social and economic institutions operate best with a minimum population per area. For example, 1500 people might be considered a minimum number for an adequate school system.

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[1] Professor, Department of Rural Sociology, College of Agriculture, University of Wisconsin.

A 4-year high school with less than 150 students is often considered small; yet there are high schools operating with less than 100 students, which means the costs become exorbitant and the area served becomes too great for efficient operation.

In many rural areas in northern Wisconsin the critical point has been reached where a further appreciable loss of population will raise costs to the exorbitant level or even to the point where services could not be provided for many areas. A basic principle should be stated here, i.e., the minimum population in many rural areas is now being reached if the area is to:

1. Maintain basic services and/or
2. Develop its resources to
3. Provide a decent livelihood.

An analysis of some population changes, using the North as a reference point, follows:

1. Changes in numbers.--Most of the counties of northern Wisconsin have shown population losses consistently since the 1930's. There was some "damming up" during the late 1930's, but beginning again about 1940 the loss has continued at about the same rate as earlier. In the 1950's, taking northern Wisconsin as an illustrative unit, Forest County lost 21 percent in population and ranked No. 1 in terms of loss for the 17 counties of northern Wisconsin. No. 2 was Bayfield County with a loss of 15 percent, and No. 3 was Price County with a loss of 13 percent. Out of the 17 counties of the north, only one county--Oneida-- showed an actual gain in population; this probably can be attributed to the fact that Rhinelander, the only large city in the county, has gained appreciably in population. Except for a few instances, the pattern for northern Wisconsin has shown consistent population loss over the last 13 years. Taken as a whole, the population change looks something like this: In 1920 there were 295,000 people; in 1930, 288,000 people; in 1940, 312,000 (showing the damming up due to the depression); in 1950, 296,000; and in 1960, 274,000, which is an all-time low for northern Wisconsin. There is no reason to think that this trend will not continue, unless some basic changes take place in the thinking and planning for the area.

2. Residence groupings.--The primary change going on in the north has been much the same as in other areas of the country and the state, i.e., a movement from farm and rural areas into urban areas. If anything, the movement has been at an even faster rate in some of the more rural areas of northern Wisconsin. Again, there is nothing on the horizon that indicates a change in this trend of urbanization.

3. Age groupings.--A rather interesting age pattern for the north is shown in large proportion in the under-5 and 65-and-over age groups. The north has not only a large preschool population, but also a large proportion in the older age categories. In fact, with few exceptions the counties of the north lead all the counties of the state in terms of number of people in the age group 65 and over. This has some implications in terms of planning for employment and the development of resources for the area, especially recreation. Also, as might be recognized, the implications in terms of services and who pays for these services are obvious; i.e., that a smaller and smaller proportion of the population must pay for the basic

services of education, health, welfare, government, etc., since such a large proportion of the population is in the dependent age group. This is particularly acute in northern Wisconsin.

4. Education.--The north is rather unique in that it has some of the highest school attendance figures for all of the state. In fact, out of the first ten counties, over half of the top school attendance counties, as far as high school and college are concerned, are found in the north.

5. Employment.--Probably the most unique factor we want to mention here is that so many people have multiple jobs, and many other people are underemployed. Much of the development in recreational facilities could employ people from the areas.

6. Income.--As indicated above, income is perennially and persistently low in the 17 counties of the north. In fact, there are many counties where as high as one-third of the families have less than $2000 of disposable income, using 1950 figures. This is nearly twice as many families in a low-income category as in some of the wealthier counties of the southern part of the state.

Just where do we stand as far as the development of human resources in rural areas is concerned? First, let us consider the positive side. There is a high educational attainment for the youth coming through school today as well as the younger adult population; in other words, a well-educated group throughout agriculture. Second, there are a large number of potential leaders because of the high educational attainment patterns of the population. Third, there is a high labor force potential, especially among women; and coupled with this there is also a large number of persons available for partial employment. These people already have one job; they would like some other supplementary employment. This is particularly true of the middle age group, but also includes the older age group. And finally, there is a large labor force available at particular times of the year. This availability is highly seasonal, but some forms of industry might be able to take advantage of it.

On the negative side, there is a loss through migration of the young educated population. Second, there is a low-income problem in many rural areas. Third, the labor force is highly mobile, coupled with the educational problem mentioned above. Fourth, there is low use of the labor force in relation to the resources. This is the general principle restated. Fifth, there is high underemployment generally of the population, especially in the north. In fact, the underemployment problem is much more important in many ways than the unemployment. Finally, there is low development of the physical resources. This in turn is coupled with low income, the lack of certain types of developmental capital, and the lack of risk capital in the area.

What can be done? The need is to bring the balance back between the physical and human resources as indicated in the earlier part of this paper. This could be done in numerous ways:

1. By keeping or bringing back the young educated group in order to give the leadership and the dynamic drive that is needed in many rural communities.

2. By providing capital, particularly risk capital, so that northern Wisconsin can develop its physical resources in order to balance the two types of resources. This means advertising the advantages, particularly the fact that there is a well-trained, available labor pool, as some studies have indicated. The unique raw materials should be advertised also: the water resources, the lumber, the lakes, the recreational outlets, etc. A good job is being done, but it could probably be better.

Basically, the need to develop more adequate leadership with the resources at hand should be recognized. Most of these things can be done with our own resources in the area. Probably a small amount of "pump priming" is necessary to get things moving, but then much of the work needed can be done with the resources, both social and economic, that are at our disposal.

Human values are basic to the development of any physical resources. The development of recreational resources is no exception. Motivation, leadership, security, goals are not empty words. These values must be identified, classified, and, above all, related to the physical determinants of the recreation resources.

OUTDOOR RECREATIONAL PROBLEMS FROM THE POINT OF VIEW OF THE LAND MANAGER

by Donald P. Duncan[1]

Our concern in this conference is with outdoor recreational problems and the research needed to help provide answers. This paper will deal broadly with some of the problems from the point of view of the land manager. Let us consider the land manager for a moment. Who is he? In the broader sense, whoever controls the water, the mountains, the forests, the wildlife, the historical sites, or other attractions inherent in the land is a land manager. Whether an employee of a municipality, a state or province, the federal government, an industrial corporation, or a landowner in his own right, he who controls the land is a manager. He may intentionally avoid management in the usual sense. But whether he adopts a laissez-faire attitude or consciously manipulates the land toward particular objectives, it is he who provides (or limits) opportunity for outdoor recreation.

Most land managers, at least those owning or controlling large acreages, now assume what might be called an enlightened long-range outlook which gives consideration to the next generation. Unless the manager takes this point of view, one might question whether he should, in fact, control the land. Human society is so dependent upon land and its related resources (and in spite of the prospect of space travel, this will be true for a long time to come) that those who misuse these resources in the interests of immediate monetary return should not have that privilege.

The land manager with this enlightened outlook, however, is forced to compromise when he deals with recreational values. Those who manage lands set aside for parks recognize a conflict between use and preservation. Use is concerned primarily with the present generation, whereas preservation is linked more closely with generations yet to come. Where does one compromise between the interests of those here now and the interests of their children or grandchildren? Expediency moves toward the satisfaction of current wants at the expense of future generations, particularly if no objective standards can be imposed. Should the manager discount future recreational values for comparison with current needs in much the same way in which he might discount future timber values for comparison with present costs of providing them? If this discount principle can be applied to the allocation of recreational land use, then who will estimate future values when we cannot even measure present recreational worth? In this particular problem, surely the manager must look to social scientists for assistance.

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[1] Professor, School of Forestry, University of Minnesota.

Another compromise is that faced by the manager of multiple use forest land. This appears because of conflicts among uses, all of which are necessary in the satisfaction of human needs. Some are compatible with one another on a given land area, but not infrequently two or more competing uses for the land are entirely incompatible. There are all gradations between these extremes. How does the land manager decide among incompatible uses or among those of doubtful compatibility? How can he weigh the physical needs of man for water, for timber, or for minerals, against his mental needs for intellectual stimulation or for tension release? Or how can he weigh either of these kinds of needs against man's spiritual needs for contemplation or for inspiration. To state one side of the problem another way, does outdoor recreation reduce insanity or is this simply a peculiar idea some of us may hold? If, in fact, insanity is reduced, how is this to be compared with our need for timber or for water. Certain groups press for preservation against the intervention of man at the expense of material resources. Is this a reasonable position because we have consistently underestimated our nonmateria needs? I think no one knows at the present time.

These decisions on the part of the land manager involve human values, both physical needs and social needs. It is easy to underestimate assets to which no monetary value can be attached. At least on public lands and perhaps also on private lands, these decisions become political decisions derived from the relative strengths of pressure groups. They are, to a considerable degree, subjective decisions. If a more precise measuring stick can be provided by means of which more objective comparisons can be made, this would be helpful indeed.

If we assume that these kinds of questions basic to recreational land management can be answered more rationally than now is possible, the manager still faces other questions involving social science insights. Some of these are quantitative. How much recreational land is needed? How are these needs distributed over time? Where is recreational land most needed, i.e. how are these needs distributed in space? On the last question, we know that the demand for outdoor recreation near Chicago, for example, exceeds the demand in western Ontario. But does this mean that a greater acreage is needed near Chicago? This leads to qualitative questions.

What are the kinds of demand likely to appear in the foreseeable future? Where is popularity with the public likely to skyrocket as it has with respect to skiing and other winter sports or as it has more recently in the growth of boating and water sports? What is the impact of opportunity? If gliders, for example, were suddenly reduced in cost, would many more take to the air so that glider ranges would become as much in demand as golf courses? Conceding that new developments may be difficult or impossible to forecast, the capacity to predict relative demand for picnicking as compared with wilderness, for example, would be extremely helpful to the land manager. What effect will increasing numbers of people in the older age classes have upon the kind of outdoor recreation demanded?

Qualitative considerations having immediate significance in land management can be carried to finer dimensions. Within wilderness areas, to select one difficult problem, the land manager is faced with at least three alternatives. First, he could let wilderness use grow more or less like Topsy. Until recently this has been usual. Second, he could restrict the number of users to avoid the loss of the kinds of attractions which bring people in the first place. If this solution were adopted, how should the favored few be selected for the privilege? Or, third, he could undertake limited intervention or management within the wilderness reserve. He might provide primitive latrine and fireplace facilities; he might maintain rough trails; he might eliminate some camp sites and add others; he might restrict party size or number of pack animals; he might provide for the improvement of fish habitat; or he might control undesirable vegetation appearing because of man's activities. But when he undertakes any or all of these, how does he affect wilderness values insofar as the user is concerned? Some would ask, Which of the three alternatives mentioned is least undesirable?" But perhaps the third alternative, limited management used with discretion, is not really undesirable except in the minds of a few individuals. How important is relatively complete absence of management to this segment of the population? Here again, the social scientist can assist the land manager.

The problem of financing the activities required on recreational lands is particularly difficult for the land administrator. Should the participant be expected to underwrite directly the total cost of the recreation which he enjoys, should he pay for only a part of the total cost, or should he pay for none of it? If he should pay for only a part of it in direct charges, how should these charges be made and how large should they be?

Outdoor recreation has been compared with higher education insofar as financing is concerned, and, in some respects at least, is not greatly dissimilar. At the present time, some of the costs are largely underwritten by the public through appropriation of tax moneys. Others are covered by gift or donation. Still others are, to a considerable degree, self-supporting. The method used varies with ownership, with agency, with type of activity, and with other variables. It follows no well-established uniform pattern.

More adequate financing methods need to be found if the demands of the present, not to mention those of the next decade or two, are to be met. Perhaps private landowners could be encouraged to provide a larger proportion of the need if given appropriate tax relief. If a system of charges for the privilege of hunting were generally recognized by the public as reasonable and necessary on private lands, this might help to solve the problem.

There are several elements here which need research. What does it cost to provide the various kinds of outdoor recreation? What should the user pay? What effect would a charge have on the volume of use? Or should opportunity for outdoor recreational activities be provided to all without charge or with charges only for special services? The social scientist, particularly the economist, can provide real assistance on these problems through research.

A related question confronted by the land manager is that of responsibility for the development of the needed recreational opportunities on wildland. How much of the load should fall upon public lands? How much upon private? If a major part is to fall to the public land managing agencies, how much should be on the state or provincial level and how much at the federal level? What is a reasonable division between the park agencies and those concerned with multiple uses of land?

We have attempted to review a few of the more troublesome problems. Some involve a look into the crystal ball; some are more immediate. But in the face of tremendous pressures, land managers must take action. They cannot postpone decisions in the absence of research. It is safe to say that whatever information is provided to throw light on their problems will be put to effective use.

CHANGING FUNCTIONS OF RECREATION IN HUMAN SOCIETY

by William Burch and Marvin J. Taves[1]

One of the main objectives of this inquiry is to explore how values surrounding leisure have varied through history. But first it behooves us to remind ourselves that our own values affect how we perceive those cultural values.

One of our progenitors said in 1798,

> One impulse from a vernal wood
> May teach you more of man,
> Of moral evil and of good,
> Than all the sages can.

Compared to terms such as ecological balance, increasing demands, economic derivatives, and other empirical-sounding statements, Wordsworth with his simple words seems grossly ill-informed. Yet in the stillness of ourselves we must admit that we accept, at least in part, Wordsworth's values. Why else our concern and interest in "good" human use of forest recreation?

Co-joined with these latent values is an equally pervasive force in our cultural training which holds that democracy is good, the people are wise, and that this ideal demands the greatest good for the greatest number. While we must admit to such, we pose in the role of experts. Society expects of experts the right, even the responsibility, to tell others what to do. Such expert advice is usually to be relatively free of bias.

All this presents us with a dilemma we don't like to face. Are we to be nutritionists dispensing a diet of "good" recreation, as we define good, whether the people like its taste or not? Or are we to accept all decisions of the people as the final and best test, defining "good recreation" in terms of numbers of users? Or shall the free market--what users are ready to buy--

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[1] Teaching Assistant and Associate Professor respectively, Department of Rural Sociology, University of Minnesota. The authors are indebted to Professor John Forster of the same department for his helpful suggestions.

determine what is "good use of leisure?" So far in the United States each generation has largely passed the dilemma to succeeding generations. Today, however, faced with an ever-growing population and increasing demands for forest recreation, it seems that resolution of the dilemma can no longer be passed on; it must be faced in this generation.

While this paper makes no pretense at solving the dilemma, it may, by providing historical perspective for viewing leisure, develop a background for asking the questions which could simplify the task. The main assumption is that social factors are crucial in shaping leisure-activity choices and in giving meaning to leisure activities. Leisure, for purposes of this report, refers to any activity not centered on the making of a livelihood or meeting biological necessities. Industrialization and the machine technology will be viewed as associated with identifiable patterns of social organization. Industrialization is characterized by the division of labor of men and machines into specialized functions which allow the prediction, control, and unification of elements of productive and distributive units by centralized control.

Nature of the Data

The data for this paper come from a series of ethnographic studies which roughly run the continuum from pre-industrial to industrial societies, and from historical reports on ancient Greek city-states and the city of Rome at the height of its power. Yet it should not be inferred that Rousseau's noble savage or cyclical historical interpretations are espoused in this report. Subsistence man is brought to mind only to gain better perspective on present and future problems. Thus the independent variable is the stage of industrialization and the dependent variable is the leisure pattern of the respective society.

Several studies on the continuum from pre-industrial to industrial societies shed light on our topic. The study of the Tikopia by Firth reports on a culture relatively untouched by industrial thought (3).[2/] The Tikopians' contacts were limited to missionaries, a few metal tools, and the visit of an occasional trading ship. It is a barter rather than monied economy. The family is the major productive unit.

Another helpful study is that of the New Zealand Maori (2). Here Firth presents a group prior to contact and then again on the way to accepting the industrial mode. It is traced from a barter to monied economy.

Suye Mura by Embree (1) is concerned with a Japanese village surrounded by a society determined to move toward industrialization. It is a mixed barter and monied economy, and is shifting from the family as its major productive unit.

Gosforth, an English village (10), is a step closer to accepting not only the artifacts of industrialization but many of the thought patterns. Gosforth is a monied economy, it is characterized by specialization and rational division of labor.

2/ Underlined numbers in parentheses refer to Literature Cited at the end of this paper.

These studies demonstrate that 8-hour days or less, many holidays, and extensive vacation periods are not a post-industrial innovation. The Tikopia averaged 6-hour days, the Maori 8 hours, with both having a large amount of time for holidays and vacations (75 to 150 days per year) (7). Moving on to Suye Mura and Gosforth, with their monied or mixed economy, the hours worked greatly increase and the number of holidays are sharply curtailed. Thus, large amounts of leisure time are not new to man; only viewing it as a problem is new. This leads to our next consideration: How and why has leisure become a problem?

Rhythm and Time Conceptions

There is a rhythmic quality to life which, though affecting other animals, has a unique influence on man because of his ability to abstract by symbols. That is, man does more than react, he interprets, anticipates the future, and attempts to comprehend the phenomenon acting upon him by using a body of commonly held symbols. The rhythmic web of life shapes the religious impeachments of man, his patterns of work and of play. Birth, death, decay, the phases of the moon, night-day, breathing, eating--all, and more, commonly propel man through life in regularly recurring cycles. The closer man's activities are bound to the soil or the creatures of the forest and sea--to nature--the more conscious he is of this rhythm and the more markedly is his social structure shaped by it. With movement from subsistence to industrial societies the imposed rhythms shift to those of the machine, to man-made inventions rather than nature. In his seeking of durable forms to transcend his transient existence man is dependent upon some ordering of time which reflects his practical concerns with survival, and his aspirations and dreams. It is here proposed that the patterns of man's leisure together with its meanings will be influenced by his culture's rhythm and time orientations.

The Tikopia have no measure of time or divisions of time; their activities are governed by their intrinsic requirements. In fact, "the whole atmosphere is one of labor diversified by recreation at will" (3, p. 93). Thus, leisure is intermixed with work and work itself has elements of play. The Maori, "followed a closely determined sequence of operations in accordance with seasonal change and the movements of the animal and plant life around him" (2, p. 55). The Maori observed a 12-month lunar calendar containing 10 months for work and 2 for resting. And "from this calendar one can readily see how each task had its place in a definite scheme of work; how the coming of each season, and indeed of each month, brought forward its fresh need of work to be done" (2, p. 55).

On the other hand, the residents of Suye Mura are tied by agricultural seasons; however, the national government had imposed the Gregorian calendar, replacing the lunar calendar. Thus, there are "...no festivals concerning winter wheat sowing or harvesting.... The yearly festivals were more generally observed in the old days than they are today. Increased work demanded by the money wheat crop and other side work encouraged by the prefectural government have tended to reduce their celebrations...(to) encourage (the people) to do work and more work" (1, p. 28). Work is becoming rationalized.

In Gosforth the seasons (though playing an important role in rural life) are viewed as facts of life much as a machinist sees an imperfect piece of metal. There the lunar calendar has long ceased to exist--time is considered important in terms of labor input and crop output for a cash market. The farmer can no longer afford to spend a day in the village pub, for time is money.

TYPOLOGY OF LEISURE PATTERNS

	PRE-INDUSTRIAL	TRANSITIONAL	PRODUCTION	CONSUMPTION
ECONOMY SOCIETY	Tikopia Maori Suye Mura	Gosforth	U. S. A.	
LEISURE VALUES	celebration of work done	refreshment to do more work: "work ethic"		new synthesis developing
	leisure intermixed with work; labor viewed negatively	Distinctions develop between work and play	leisure and work sharply deliniated; labor viewed positively	work has aspects of play; play takes on aspects of work; leisure big business
TIME ORIENTATIONS	no calendar; lunar calendar life tied to cycles of the seasons Activity governed by intrinsic requirements	shift from lunar to Gregorian calendar, seasons diminishing in importance - market values introduced	Gregorian calendar, tied to marked fluctuations more than seasonal variations	time ration-segmented; time has price; rhythms set by technological and social inventions
EXCHANGE	Reciprocal - barter	money introduced	money	
ORGANIZING INSTITUTION	Communal - Sacred	Sacred - State	State - Commercial	
AMOUNT OF TIME AVAILABLE	4-6 hour work days, 150-175 holidays 8 hour work days, 150 holidays	increasing amount of time devoted to work; less and less holidays 60-80 hour work weeks	45-60 hour work weeks; 60-70 holidays or vacation days per year	average 3,700 hours free time per year

Thus, subsistence man has his leisure activity and time shaped by the shift of seasons rather than the ticking of a clock or the rationality of the Gregorian calendar. In the least industrialized societies time is measured by seasons rather than seconds; the passion for speed and efficiency are sporadic rather than ever-present. It appears to make a good deal of difference in one's orientation to life (1) if one has a conception of minute divisions ever dribbling away, and an orientation further backed with a demand or ethic to fill each of these divisions before they ephemerally escape; or (2) whether one sees life as divided into planting, harvesting, fallow, and their attendant problems. The former is rational, the latter empirical. One is concerned with the leavings of time after work, the other with tasks to be done.

Industrialization also has yet further implications for our view of leisure. Money, by replacing barter, removes the need for personal intimacy and provides a standardized measure of goods and services. With rational time divisions, arbitrary space can be ordered and evaluated. Both of these are essentials of business efficiency in an industrial situation. They permit the rational calculation of the value of ends and of the cost of means to achieve them. Whether a society will use these tools as they have been used in Western capitalism and Soviet communism depends upon its cultural values.

Shifts in Values of Work and Play

Societies in providing solutions to needs tend to create new needs. Thus, in the process of accounting for death, the needs for salvation, purification, and a sacred order arise. Further, the means for securing these goals can be altered. One can demonstrate his right to salvation by going to a monastery and forsaking worldly things, or, as with the Protestant reformation developed by Calvinism, one can demonstrate this right by his success in this world. Then success becomes equated with salvation and gradually evolves into an end unto itself (9).

Whether it is Calvinism, or Soviet Marxism, or state-imposed as in pre-war Japan, the elements of the ethic remain similar--the acquisitive virtues of enterprise, diligence, sobriety, frugality, thrift, and purpose are emphasized. What is essential to us is that this ethic places a premium on work and a negative attitude toward leisure. Leisure and play are frivolous unless they contribute to further work success.

In our ethnographic studies this ethic is not present, labor is seen as an onerous duty to be avoided, and when it is completed one celebrates to relieve tension. The citizens of the Greek city-states and of Rome employed slaves to do the labor while they engaged in the more ennobling leisure duties of art, politics, and games. To a certain extent this is still characteristic of some Latin countries where a stigma is attached to those who engage in manual labor. In these underdeveloped nations it is difficult to encourage students to enter engineering and sciences, rather than the arts and humanities (6).[3/] This later attitude is the development which Veblen saw emerging in the American Leisure class (8).

Thus, leisure attitudes have shifted from (1) celebration of labor completed, to (2) refreshment so that labor may continue more efficiently, to what seems to be (3) the development of property rights in set amounts of nonwork time.

From Sacred to Secular Organization

In the pre-industrial societies there is one additional element which adds its influence: in these societies all feasts, festivals, games, rites of passage, and other leisure activities are assured a moral underpinning as they are organized and sanctioned by the religious authorities. However, as they develop in complexity and the demands of state unity increase, the state begins to assume secular responsibility for the celebrations. In Rome the religious word for holiday feriae is supplanted by ludi or holiday of school boys. This is co-joined with more and more secular influence in the staging, production, and criticism of leisure events. Businessmen replace priests in

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3/ Also see the Annals of the American Academy of Political and Social Science, March 1961 issue devoted to "Latin America's Nationalistic Revolutions."

staging the games in honor of state heroes, and journalists provide criticism of the events (4,5). The secular rationale of keeping the economy going or keeping the state physically fit seems to invest little of the moral involvement that a festival for the Gods or the glory of the state can provide.

Function of Leisure in Retaining Continuity

It should also be noted that, under the impact of social change, among the last things to go is the form of the leisure events. The content may be gradually altered; however, the event continues, even though the celebrants may have long forgotten the reason for the event. Thus, Christmas becomes more a stimulation of retail trade, Saturnalia a secular period of license, and harvest days in Gosforth persist even though threshing machines eliminate the need for communal aid; and in Suye Mura the lunar new-year celebration is retained in spite of the imposed Gregorian calendar. In all these events, affinities with the past are symbolized. A meeting ground of old and new generations is thereby prepared. The feasts marking the major crises of life, birth, marriage, and death also tend to be retained though in somewhat altered form. Further, many of the archaic practices and symbols remain in making the transition smoother--for example the unchanging style of gowns for academician and priest symbolically reaffirm the timelessness and continuity of their "leisure" productions. In like manner, leisure activity functions to reaffirm group commitment.

Contemporary Man

Now industrial man, standing on the frontier of automation, finds the majority of the labor force engaged in nonproductive occupations. Concern with production is giving way to concern with consumption, and billion-dollar business is hailed as an important engine in keeping the economy moving. The business of encouraging the spending of money to "spend free time" is big business. Some social critics are more skeptical, saying that work has become play and play has become work, and Sloan Wilson suggests that "happy idle hours (have) become a rat race." Thus, leisure is not leisurely and the promised land is a hell.

While the applauders may have ignored the illogic of their infinitely expanding universes, the critics damn routinization one time and feverish activity another. If leisure was ever prescribed and routinized, it was so for subsistence man. He did not wonder whether to go to the feast or to golf or watch TV--of course he went to the feast! Everyone goes to the feast! He had no problems of leisure choice; what he did was as natural as breathing and also would be ridiculous to decide not to do.

When Marty and his friends wonder, "What'll we do? I don't know. What d'ya wanna do?" they are faced with the problem of choice from a vast array of leisure alternatives while new leisure inventions continue to further crowd the shelves! As the child is dazzled by the vastness of a toy department when told to take any two toys he wants, so also leisureliness and freedom from worry are not the only rewards of free time. Industrial man seeks a meaningful choice under the tyranny of time, and without the clear directions of subsistence man, in his selection of leisure activities.

Next, as former aristocratic preserves of leisure are further democratized, the earlier value of recreation for announcing one's position tends to lose its force--i.e., as the middle classes go camping, its former appeal to the elite becomes vulgarized. Nay, as the old leisure classes retreat, perhaps to archaic values, the new middle classes enter with strong desires but without clear norms of appreciation. Thus meaning of the activity is bound to be vague and "tastemaker" groups to be fluid; the quest is bound to be superficial, faddish, hectic, and perhaps in the end unsatisfying.

This is one reason why linear projections may be mathematically sound, yet socially false. A few examples should clarify: If 435,000 Americans went abroad in 1947 and 1,500,000 in 1957, will 4,500,000 go in 1967? Can we use the same linear projection for people going to Europe, for people going water skiing, "do-it-yourselfing", loafing, dancing, arts, and all the other possibilities? Where does the point of diminishing returns set in? Certainly all the people can't engage in all the activities all of the time. Yet this is the basis for most of our predictions. What happens when the freeways to the forests are packed with weekend campers? How long will people willingly extend the five-o'clock "rush" into their weekends?

What of negroes and third-generation Catholic immigrants? As they move into the middle class, will they tend to move to the camping experience? Will segregated camping grounds develop by the voluntary fleeing of whites as occurred in city parks in Detroit and Chicago?

What of the tyranny of the summer cottage; the feeling which is often expressed by, "Now that we have it, we have so much invested in it, we must use it." It becomes a duty, possibly not a leisure experience. And as the children become older and find the boy back home or Jr. Legion baseball hard to leave, is the cottage experience going to remain? Or will tastes be altered?

Each of these examples points up the social fact that we will be hopelessly lost by assuming that leisure decisions are random expressions of 180 million discrete units or even 60 million families. Our task can be made easier by realizing that an individual's membership in social groups is important. These groups, whether formal or informal, formed or in the process of formation, will have a significant influence upon one's choice of activity and his involvement with that activity.

The individual does not develop leisure values in isolation. There are significant "others" who collectively provide the setting for standards of taste and arenas for validation of taste. As the individual develops skills and confidence in a leisure activity his fan of alternative choices will tend to become more limited. Thus, we must ask what forms of recreation will cost the greatest emotional price for users to give up? We must also ask which groups tend to form the most stable population of forest users--that is, users who may transmit their values across generations; and which groups of present users tend to have the least stability and least transmission of recreation values from one to another generation?

Summary

In summary then, we are not simply concerned with dollar volume, park acreages, and number of users, or even volume of timber standing and cut; we are also concerned with the human values derived from the forest and the values which lead men to the forest. We are concerned with forest recreation for its therapeutic refreshment, educational and release functions. We want to be able to estimate future users, what categories of users they will be, and what segments of the population they will most likely come from. But more than this we want to know what the forest experience is doing for and to them, even before we ask what they are doing to the forest.

The social processes which shape the meanings of human existence have returned to industrial man his most ephemeral resource--time. And amounts of time which only the small leisure classes of other societies of men in temperate subsistence societies had available. He enters it with the hangover of a philosophy which gives dignity only to work, with a precise, rational and circumscribed time orientation, and without the moral underpinning of his religious institutions. A transition of values will occur, and is occurring, in the arena of leisure. A large part of that arena will be the forests and parks of our land, which until recently have been largely the recreational preserves of white, Protestant, upper-middleclass Americans.

To assume that the demands and desires of tomorrow's users will be the same as today's is the larger part of folly--and the kind of folly we perpetuate by ignoring history and handing on the dogmas which seemed to hold true in the past. In our planning and budgeting we should be aware that social change in any society has a differential effect on the groupings of that society--youth and aged, high status and low status, for example.

Further, it is folly to assume that, because a set of need expectations led a person to the forest, these needs will remain static and will be the ones which continue to draw him to the same forest experience. If 4,000 people use a new boat ramp the first season, and 6,000 line up the next, it does not necessarily mean that the same people are using it or that those using it are deriving the same need satisfaction or that their children and children's children will come in response to the same needs. To suddenly sprinkle the forest with boat ramps because the people want it this season may in the long run harm the needs of those pioneers who set off the initial reaction, but later want a different experience.

Men who are patient enough to wait years for nurture of a tree often become impatient waiting for the perplexing nurture and growth of human tastes. The patience to include a careful evaluation of the significance of changing values and potential changes in tastes is essential to a more thorough understanding of the future for forested-area recreation.

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RECREATION IN THE UPPER GREAT LAKES AREA

A SUMMARY OF SOCIAL RESEARCH

Gordon Bultena, Robert Lucas, and William Hathaway[1]

An astute observer perusing an accumulation of social research conducted during the last half century would experience little difficulty reconstructing many of the major concerns of Americans, for such are clearly mirrored in the scholarly works of this period. The changing status and use of free or leisure time might well engender particular attention, for few areas of life have undergone more profound transformation. An examination of bibliographies concerned with leisure reveals, in some measure, the magnitude of this change. The development of seminars on research needs is indicative of its direction.

The relevant literature on leisure ranges from what may be termed serious and authoritative studies to that reflecting a moralistic orientation directed toward the realization of specific reforms. The existence of such diversity is partially a function of the value system within which researchers have worked, and which they have been unable to completely divorce from their writings.

A work ethic has so traditionally characterized our society that a consideration of leisure, in and of itself, has frequently approached the taboo. Leisure and work have been inextricably associated, the meaning of leisure being derived solely from the nature and meaning of work. A puritanistic glorification of the values of work, coupled with Veblen's and others' pertinent observations on a leisure class, has created a climate in which, as David Reisman describes it: "...many people become uncomfortable when discussing leisure," and, we might add, even more uncomfortable studying it.

This state of affairs is rapidly changing. One no longer need become unduly concerned in utilizing such concepts as "mass leisure" to describe an emerging orientation in American life, for a work ethic of the past is now being replaced by an ethic of leisure. According to C. Wright Mills (1, p. 236):

> "What is psychologically important in the shift to mass leisure is that the old middle-class work ethic --the gospel of work--has been replaced in the society of employees by a leisure ethic, and this replacement has involved a sharp, almost absolute split between work and leisure. Now work itself is judged in terms of leisure values."

This change is evidenced in the large number of Americans moving about the country in search of good locales for leisure, rather than in search of occupational opportunities (55). It is further seen in the prevalent belief that the meaning of life should be sought henceforth in the creative use of leisure, rather than in the work milieu (76).

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It would appear that the foregoing observations have particular relevance for a seminar encompassing both social scientists and government administrators. The new role that leisure is playing in our lives must certainly concern the scientist, working, as he is, toward an understanding of human behavior. Nor is it irrelevant for the administrator who is positioned, so to speak, directly at the firing line. For it is not only his role to accommodate the demand for forested-area recreation, but to facilitate, in some degree, the realization of values which vacationers are seeking.

We view our role here to be the brief review of research which has been concerned with the nature, extent, and ramifications of changing leisure patterns. However, upon embarking on such a course it soon becomes apparent that the past cannot be adequately understood without reference to the future. A comprehension of what has already been done seems inevitably to suggest the question: What needs to be done? For this reason we have not hesitated to introject into our review, where it appears applicable, an indication of the direction in which future research might proceed. Both as individuals interested in outdoor recreation, and as social scientists, we have, no doubt, made value judgments along these lines commensurate with our interests, judgments which may fall outside of the interests and concerns of other participants. This is to be expected in a venture of this sort. Furthermore, because of the brevity of our time, and the nature of the materials reviewed, we have limited our discussion primarily to studies conducted in the Upper Great Lakes area, although we have not hesitated to include other materials which appear pertinent.

One difficulty in a review of this sort is that relevant literature is fragmented in the sense that it appears in a great many different places and often in "fugitive" publications of various governmental units or in thesis form. Much of it is not published or reviewed in professional journals, and much of it is not indexed in the standard bibliographies. We confess to being particularly ill-informed on Canadian research.

Recreational Land Use Studies

C. W. Loomer of the University of Wisconsin has explored the economic characteristics of recreational land use and possible lines of research in a recent paper (35), and Samuel T. Dana previously had reviewed past work in forest recreation and considered needed future research, including land use studies (4).

There has been a fair amount of published material on recreational land use over the last 30 years, more than might be expected. However, there has been little unity or interdependence within the work; many studies have not fulfilled their full potential because of this fragmentation, and despite the many studies cumulative progress in our knowledge is disappointing. Thus, people have been writing in frustration for 30 years or more that recreational land use is "a neglected field of research."

General or nationwide studies have shed some light on the Great Lakes area--studies such as the 1928 Recreation Resources of Federal Lands or the 1938 Recreational Use of Land in the United States by the National Resources Board. The Outdoor Recreation Resources Review Committee report, due next year, should be useful for the United States portion of the Great Lakes area.

Regional works were perhaps more common in the 1930's, many of them associated with the wave of interest in planning; examples are W.O. Hedrick's Recreational Use of Northern Michigan Cut-Over Lands and the study, Recreation as Land Use, dealing with Wisconsin by Wehrwein and Parsons (42). These studies were also much concerned with the potential local economic contributions of recreation.

More recent studies might be classified somewhat arbitrarily as follows:

1) Basic description and internal analysis
2) Recreational land use in relation to source areas of visitors
3) Land use competition and conflict
4) Planning surveys

It is impossible to discuss all of this work, and only one or two random examples of each will be mentioned:

1) Basic description is exemplified in a study by Robert Harper who classified and mapped recreational land use in the Lake Geneva-Fox River area in Wisconsin and Illinois (30). His analysis of internal relationships showed how intensively developed an uncontrolled area of only modest physical attractions can become if it is accessible to a large urban population and provides some environmental contrast, and how overwhelmingly shoreline-oriented recreation land is. Such developmental descriptions are also potentially useful as a foundation for other specialized studies.

2) As an example of the second class, Roy Wolfe studied the distribution of summer cottages in Ontario in relation to place of residence (43,45). He found the major urban areas strongly dominant. One hundred miles north of Toronto over 50 percent of the cottagers were still Toronto residents and 41 percent of all Ontario summer cottages were used by people from Toronto.

3) Land use competition and conflict could include competition between recreation and other uses, between types of recreation, and between public and private recreation. An example of the last category is a paper by Barrett on the very extensive and very rapidly increasing fencing of private land in Michigan, barring the public from these lands (24). Again this process has gone the furthest closest to the urban population centers and is spreading outward from these centers. This is a field particularly in need of more work.

4) Planning surveys of land use would include the recent Great Lakes shoreline survey by the National Park Service which mapped land on the basis of present and potential use (29), or the Forest Service Recreation Survey mentioned later in connection with use projections.

Economic Impact Studies

The local economic contribution of recreation is a very common approach. It is a theme in many studies that might have been classified as "land use"; in fact, it becomes central and land use peripheral, and therefore this type of study is listed separately.

There is a general tendency for the northern forest recreation areas to be economically depressed, and much hope is held out for income transfers from more prosperous areas through recreational visitors.

Various approaches have been used to measure this transfer; estimates of average daily expenditures, based on surveys, multiplied by the estimated total number of visitors is the most common. Unfortunately, double counting is also common.

A new series of studies attacking this problem, and other related problems, has been published by I. V. Fine and E. E. Werner of the University of Wisconsin (88-98). Another example is the Minnesota Arrowhead Association Vacation Travel Survey carried out in 1958-59 (8). Richard Sielaff, who directed that survey, is now conducting a similar study of the northern part of the 9th Federal Reserve District.

Another attack has been made by analyzing seasonal sales tax receipts, comparing the summer peaks in recreation areas with the statewide pattern and the pattern of urban areas (46, 47).

Economic Demand and Value

This is a thorny issue. It is inherently difficult to try to establish the market value of a service which is largely provided outside the market (this, rather than "intangibility", seems the main difficulty) (58, 59). Public agencies which must allocate land and funds between recreation and other uses without "marketing" recreation are anxious for an economic guideline, however. Some people, nevertheless, maintain that a dollar value cannot be attached to recreation, while others argue that it is dangerous or undesirable to try to value recreation in such terms (57, p. 3; and 12, p. 187). These positions have been effectively criticized in many of the publications which we will cite.

Valuation schemes are many. Some people have simply used gross expenditures, especially in connection with the studies of local economic contributions. This is noncomparable with other uses and loaded with double counting (12, pp. 195-197). Value added may be estimated to eliminate double counting. Man-day or man-hour values have been used, arbitrarily or based on survey data (12, pp. 189-194). Clawson has developed demand curves based upon travel distance from a concentric zone as a measure of cost, and the proportion of population from this zone visiting the area as a measure of consumption (57). (A somewhat similar approach has been used to develop a recreational man-day value (64)). Milstein has reconsidered this technique in a paper at the Michigan Academy of Science, Arts, and Letters meeting in March. This paper is not yet published.

Characteristics and Attitudes of Users

One topic which has elicited much interest has been the determination of the number of vacationers yearly using state, federal, and private facilities, as well as ascertaining user characteristics as regards age, sex, education, socio-economic status, and the like. All of the states in the area and Canada have engaged in studies of this nature. In this research, examination has been made of the characteristics of vacationers staying at private cabins, resorts, and youth camps, as well as those inclined toward the more rugged activities of canoe or campground camping. Specialized studies have dealt with skiing, picnicking, fishing, hunting, and other outdoor recreations.[2/] Because of the great diversity of these activities, it is difficult to compactly summarize relevant findings, although some observations are in order.

First, these studies indicate that outdoor recreation is not exclusive to any particular social class, but encompasses a complete array of income and occupational groups. However, it is interesting to note a disproportionate representation of persons from higher occupational and income levels in activities which frequently have been viewed as appealing only to those unable financially to undertake a more costly venture. For instance, wilderness camping and canoeing exerts a strong appeal for professional, technical, and managerial persons, with these occupational categories encompassing 38 percent of the campground campers and 50 percent of the canoeists contacted in a recent study. The relatively high incomes of many were particularly striking (79).[3/] Similar findings are evidenced in studies conducted in other areas, such as state parks (90, pp. 8-9; 68), as well as in studies of cottage owners and resort guests (91, 8).

What is inherent in a camping experience that should warrant its appeal for such groups? An answer to this question must proceed beyond a mere examination of camping itself, and take cognizance of both the attitudes of vacationers and the social milieu from which they are drawn. The unique appeal of camping in one forest is seen by respondents as lying in its natural qualities and the opportunities that such entail for temporarily escaping the confines and artificialities of the city, as well as divorcing oneself from the cares associated with the work-a-day world (67). To the extent that individuals evidence such "escapism", a camping trip in a natural surrounding exerts an appeal. With an increasing proportion of the nation's population contained in large cities, and a changing occupational structure, such an appeal may be even more evident in the near future than at the present time. Certainly this is one research area deserving attention.

A second interesting conclusion which may be drawn from these studies relates to the nature of the residence from which most of the vacationers come. In general, the large metropolitan centers contribute a disproportionate share of the recreationists, while small cities, towns, and open country areas contribute fewer than might be expected simply by virtue of their numerical importance in the population. In Minnesota, for instance, a recent study reveals that nearly 90 percent of the campers in state parks reside in urban areas; in fact, 58 percent came from centers of 100,000 population or more (68, p. 8). In a study in the Quetico-Superior, it was found that one-half of the respondents were from metropolitan areas of 500,000 population or more (79). A recent Wisconsin study indicates that nearly 1½ million people from the metropolitan Chicago area came to Wisconsin on an overnight pleasure trip during 1959 (88, p. 6), and that better than 50,000 persons came from Minneapolis and St. Paul (95, p. 3).

One frequent finding of camping surveys which is of particular interest is the overwhelming predominance of families vis-a-vis other types of groups. For instance, 8 out of 10 groups camping in Minnesota's state parks are

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[2/] See attached bibliography for an indication of the diversity of this research.

[3/] The findings in 79 are supported in a yet unpublished study conducted in the same area in 1960.

families (68). These results are paralleled in a similar Wisconsin survey (90, p. 7). Even when such rugged activities as wilderness camping and canoeing are considered, family camp groups are readily evidenced, with approximately 60 percent of all parties vacationing in the Quetico-Superior in 1958 comprised of families (79, p. 9). The rapidly increasing popularity of family camping is also evidenced in the recent appearance of family camping magazines, the emphasis on private and public camps catering exclusively to families, and in the clothing and camping equipment appeals directed toward women. These indications and others clearly denote that camping is no longer exclusively a male's domain.

The popularization of family camping would appear especially important inasmuch as this activity has traditionally been viewed as calling for a rugged type of behavior befitting only the masculine male. The fact that large numbers of women and children now participate would seem to reveal an important change in American value orientations, as well as an indication of profound transformations in the role definitions accorded men and women. One social psychologist goes so far as to see the recent "invasion" of females into such predominantly male play forms as hunting and fishing as signaling a new phase in the "battle between the sexes" (see Gregory P. Stone in 5). It might appear that women are usurping many of the masculine symbols formerly monopolized by men, first in the working world, and now in the realm of leisure.

In general, scant attention has been paid by behavioral scientists to the impact of family camping on such things as family members' satisfaction, family cohesion, and other patterns of family life in contemporary American society. Yet such research would seem particularly warranted in light of the finding that marital adjustment or maladjustment is, among other factors, highly dependent on the nonwork time behavior patterns and attitudes of husband and wife (73). Furthermore, with the tendency for leisure activities of family members to be increasingly centered outside the home, the role of camping in promoting family solidarity and cohesion needs to be better understood. There is, of course, a popular assumption that family camping has developed out of a desire to bring the family together and to cement ties disrupted by the rapid pace of living in an urbanized society. Whether such is, in fact, actually accomplished by the activity is open to question. It would appear that a camping experience, under some conditions, might even be highly disruptive of family unity, greatly amplifying family tensions and differences. Furthermore, the current appeal of camping may mainly exist for families already characterized by a high degree of cohesion or solidarity, families who are happy, well adjusted, and family-centered whether or not participating in camping. However, one indication of the positive values to be derived through camping is suggested in the finding that fishing is one activity which parents and children most frequently enjoy mutually sharing (70).

Research is needed on the extent to which family camping plays a therapeutic and remedial role in modern society, and the degree to which it functions to promote greater mutuality of interests, to solidify familial relationships, and to give rise to greater insight into family problems. Such information would be valuable not only for the social scientist, but for the forest administrator desirous of providing a beneficial recreational experience, and for institutions and service groups seeking potential techniques for bringing about positive reorientations in broken and maladjusted families.

One topic little researched, and yet deserving major attention, is organized camping for youths. It has recently been estimated that there are more than 17,000 youth camps serving over 6 million campers (85). In Wisconsin alone, a recent study discerned 271 camps encompassing over 90,000 campers (89, p.5). It would appear that much of the future recreation pressure in many forested areas will come from this type of activity.

Organized youth camps have been established from a variety of perspectives, ranging from those associated with educational institutions to those designed to facilitate the rehabilitation of delinquent youths.[4] Yet, little is known of the significance or meaning of this type of activity for those who participate.

A recent study in Minnesota, comparing delinquent youths who participated in a forestry camp with a matched group remaining in the more conventional institution, discerned significantly greater improvement on selected personality variables among campers than noncampers.[5] A study which attempted to assess the values of a 2-week canoe-camping trip produced similar results. In this latter study it was found that delinquent boys who participated in a camping trip realized significantly greater improvement in morale and in self-confidence than a comparable group of delinquents failing to take part. There was also an indication that camping promoted greater masculine identity among the youths.[6]

These studies, and others, suggest that camping may be of some value in the rehabilitation of delinquent youths. However, since they were limited in scope, the persistence of observed changes cannot be ascertained. Furthermore, it must not be construed that camping is a "cure all" for delinquency, although statements to this effect frequently appear.[7] In fact, disapproved behavior has been experimentally induced within a camp setting (77).

4/ It is interesting to note the number and nature of recent articles dealing with camping as a therapeutic technique in the rehabilitation of delinquent youths. For instance: Robert C. Blair, "Forestry, A Therapy for Delinquent Youths", Amer. Forests 61 (August, 1955); John W. Thomas, "An Experimental Use of the Summer Camp as Part of a Remedial Program for Juvenile Delinquency", Religious Education 42 (July, 1947); Robert R. Bowers, "To the Woods for Delinquent Boys", Amer. Forests 65 (April, 1959); Dorothy Walker, "Formula for Errant Youth: A Straight Path Through the Forest" Amer. Forests 58 (March, 1952); Elton E. McNeil (issue editor), "Therapeutic Camping for Disturbed Youth", Jour. Social Issues 13 (1957); George H. Weber, "Camps for Delinquent Boys", U.S. Dept. Health, Educ., and Welfare, Children's Bur. Pub. No. 385 (1960).

5/ Arnold Rose, Thistledew Camp Study,unpub. ms., Univ. Minn.

6/ Marvin J. Taves and Gordon Bultena, Canoe-Camping for Delinquents. Unpub. ms., Univ. Minn.

7/ For instance, Senator Hubert H. Humphrey (D., Minnesota), in sponsoring a bill for the establishment of a 150,000-member youth conservation corps, claimed that such would act as a powerful influence toward preventing juvenile delinquency. (As quoted in the St. Paul Dispatch, Jan. 29, 1959.)

An understanding of the leisure pursuits of tourists cannot be arrived at without reference to the meanings that such activities have for those caught up in them. For it is only through a comprehension of these meanings that the social scientist is able to interpret adequately the behavior of vacationers and the attitudes they carry away from their experiences.

We have already alluded to the fact that leisure values have traditionally been structured by a work ethic which has characterized American society. While leisure has now, in one sense, been divorced from considerations of work, it still derives much of its direction and meaning from the work milieu. As Clement Greenberg points out (in 5):

> "To the exact end of greater productivity, capitalism, Protestantism, and industrialism have brought about a separation of work from all that is not work which is infinitely sharper and more exclusive than ever in the past. And as work has become more concentratedly and actively work--that is, more strictly controlled by its purposes, more efficient, it has pushed leisure out of the foreground of life and turned it into the negative instead of positive complement of itself. Work may be less arduous physically than it used to be, but its present standards of efficiency require one to key oneself to a higher pitch of nervous and mental effort...Leisure, in compensation, has become much more emphatically the occasion for flight from all purposefulness, for rest, respite, and recuperation."

If the meaning of leisure is partially derived from work, as we have suggested, one may hypothesize that persons from differing occupational milieus will approach leisure from a diversity of perspectives. Research indicates that this is largely the case. A number of studies have discerned a positive relationship between the social class or occupational level of recreationists, and the nature and meaning of their leisure pursuits (69, 72, 75, 81, 82).[8] It would seem that these findings are relevant to recreation in the Upper Great Lakes area.

We have already examined the finding that recreation encompasses persons from all occupational levels. If occupational commitments are related to the meanings attached to leisure, then it might be said that we are, in reality, not concerned with vacationers *per se*, but rather with diverse user types.

It would seem that the concept "multiple users" might be of value in expressing this fact. The planning necessary to accommodate satisfactorily a variety of individual needs in a single recreation area is not unlike that found in "multiple use management." This concept, referring to the simultaneous utilization of a natural resource in distinct or differing ways, has come to occupy an important, although somewhat debatable, role in forestry policy and management. In some forested areas, such diverse activities as logging and recreation are viewed as reasonably compatible and are jointly pursued in the belief that the existence of either does not detract from the potential values to be realized in the other.

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[8] Also see Gregory P. Stone, Some Meanings of American Sport. Mimeo'd. ms., Univ. Minn.

Much the same may be said of "multiple user management." We have frequently operated under an assumption that the needs of all vacationers are compatible and can be met in a comprehensive recreation plan. We have failed to research such questions as: 1) Can a variety of needs be adequately realized in a single recreation area? And 2) Is there, so to speak, an optimum carrying capacity for certain user types, beyond which the values of the recreational experience lose their meanings for all concerned?

The problems of successfully accommodating several diverse user types in a recreation area is brought to attention in several recent studies conducted among recreationists in the Quetico-Superior. In addition to presenting obvious differences as regards the nature of their camping activities, campground campers and canoeists in the area may be contrasted in their educational, occupational, and financial characteristics. On all of these variables the canoeists tend to be a more unique or elite group, occupying a higher socio-economic level than do the campground campers. It may be expected that these differences will be mirrored in the needs, values, and attitudes with which these two types approach their vacations in the forest.

In general, the two user types differ markedly in the importance each attaches to the provision of facilities in the wilderness area. The canoeists are much more inclined than campers to favor limiting facilities to only those necessary for the health and welfare of vacationers. The campers, on the other hand, attach great importance to a number of facilities, including the addition of more campsites or campgrounds and the provision of toilets, picnic tables, fireplaces, and the like (67). To the extent that the areas used by each group can be kept separate, both groups' desires can be satisfied.

Canoeists, especially those paddling, and people using motorboats (both campers and resort guests) also present obvious differences in their attitudes toward each other. Canoeists are much more adamantly opposed to motorboats than are motorboaters to the presence of canoes (102). It is possible to elaborate many additional differences between these groups, although such need not concern us here.

What is important is the delineation of the need for research on the ramifications of multiple recreation use of forested areas, and a determination of the points at which values sought by any one user type are diluted or rendered ineffective by other user types. To date, very little has been accomplished along these lines.

It would also seem important to take cognizance of the personal benefits that vacationers derive from their recreational pursuits. Such research must take account of both the manifest and latent functions of different activities.

Manifest functions refer to those contributions that recreation involvement makes towards the satisfaction of needs, as these are recognized by the participants. This is the level of analysis to which studies have most frequently addressed themselves.

The benefits that vacationers feel they are deriving from an activity are important, whether actually realized or not. If a person thinks that, as a result of a 2-week camping trip, he is better prepared to face the workaday world, he is better prepared, mentally, if not otherwise. An understanding of the benefits derived from different types of recreation, as seen by those involved, represents an important step toward determining the values of forested-area recreation to the nation.

Inasmuch as social expectations play an important role in response patterns, care must be exercised in interpreting direct elucidation of benefits. This is particularly true for youths, where it is expected by peers that all will have an enjoyable experience, and that if one doesn't it is the fault of personal inadequacies rather than the experience itself. Hence, it is not unusual for everyone in a camp group to indicate complete satisfaction with an activity, although some may be disappointed or discouraged with the venture.

The existence of social expectations may be clearly seen in the appraisals of an activity as regards its role in promoting self-esteem or social status. In wilderness camping, for instance, vacationers reject the idea that they might be interested in the activity for its status effects, although for many it undoubtedly functions to these ends. For some persons status may not be a consideration, others fail to recognize it as such, and still others wouldn't admit such even if clearly evident to them. It simply isn't proper to suggest that one is deriving status or prestige from a recreational activity. Nevertheless, the implications exist, as witnessed in the frequent conflict between play and display.

An analysis of only manifest functions is insufficient to determine all of the benefits that vacationers are deriving from their experiences. It is also necessary to understand latent functions to fully assess the values of an activity. Latent functions refer to the contributions that an activity makes toward the satisfaction of needs, without being recognized as such. This is one topic which has received too little attention in research programs.

Recreational Use Projections

Estimating future recreational demand or use is extremely difficult. Marion Clawson, who has given the subject more careful thought than anyone else in this country, writes that "at this stage of knowledge and experience, any figure (for future use of land for outdoor recreation) is little more than a guess..."(117).

Very serious problems hamper use forecasts. A few difficulties are short, incomplete, inaccurate past use records; poorly understood causal relations; and unpredictability of pertinent variables such as taste, technology, and availability of opportunities for outdoor recreation.

However, the need for information on the amount and nature of future demand is so great that efforts have been made in spite of all the pitfalls.

Clawson's estimates (117, p. 137) have been on a national basis, without a regional or state breakdown. His expected increases in visits from 1956 to 2000 for the United States are as follows:

(1) User-oriented, local recreation (mainly city and county parks) from 1 billion-plus to 3 3/4 billion-plus--almost 4-fold.

(2) Intermediate recreation (state parks, federal reservoirs, etc.) from 312 million to 5 billion--about 16-fold.

(3) Resource-based recreation (national parks, national forests, etc.) from 116 million to 5 billion--over 40-fold.[9/]

All three types of recreation areas exist in the Great Lakes area; this seminar is concerned with research in all but the urban parks segment of Clawson's user-oriented category.

Regional research along these lines is needed. Will the resource-based areas in the Great Lakes experience as great an increase as the mountain west as vacations become longer and highways better, or will users tend to define the Great Lakes as an intermediate type of recreation area, to be used frequently, but briefly?

Raleigh Barlowe has made projections of demand for recreational land in terms of population increase (115). He expects an increase from 32 million acres in 1954 to about 40 million acres by the time the U.S. population reaches 300 million. This assumes more intensive use of less recreational land per capita.

Another projection has been made on a state basis for national forest recreation demand. In 1959 the Forest Service began a nationwide recreation survey, just being completed now. This survey included an inventory of existing recreational land and of potential recreational land, and demand projections in terms of visits and land needed to provide for these visits. Their estimate of the 1956-to-2000 increase in visits was much lower than Clawson's resource-based category, from 53 million to 627 million, or about 12-fold. From this 1956 base, increases for Michigan, Wisconsin, and Minnesota were set at about 9- to 10-fold. Everyone recognizes that the methods used left much to be desired, although better procedures could not be developed with the incomplete understanding of basic relations and the limited reliable past use record. Briefly, the method involved using the 1955-57 average number of visits as a base for each state. This base was then multiplied by the product of three ratios (ratios of per capita real income, per capita leisure, and per capita travel in 2000 compared to the 1955-57 base). This gave an estimate of recreation visits per capita for 2000, and this was then multiplied by projected population for 2000.

Research could improve this technique in three ways. First, the formula could be improved--by improving the variables used, and especially the weights attached to each variable. Second, the use data could be refined. For instance, expected population and income changes in Illinois could be related to the areas where Illinois people can be expected to go, if this were known, rather than to national forests in Illinois. Third, all these projections involve assumptions about tastes--usually that tastes will remain fairly stable. If the sorts of social research previously mentioned could shed any light on likely directions of change, projections might be revised.

The Fish and Wildlife Service have estimated numbers of hunters and fishermen in 2000 at about three times the present level (118).

[9/] The National Park Service arrived at almost the same total use for 2000 in Committee Print No. 17 "Water-Recreation Needs in the United States 1960-2000", May 1960 (119).

Policy Formation

The payoff for the social scientist interested in putting his research to practical application is through government, for the most part. Problems of large size generally are solved through some kind of public action, usually in the form of statutes or administrative regulations. Specialized knowledge ordinarily makes its contribution to social change through action programs to influence legislators and administrators. The making of public decisions is the particular interest of the political scientist. The following material is intended to suggest research and materials of use in seeking to apply social science research in the study of forested areas to the formulation of public policy.

Legal-Descriptive Studies of Administrative Agencies.--Political scientists in the 1920's through the 1950's produced a large variety of legal and descriptive studies of administrative agencies. These tended to concentrate upon the history and statutory powers of such agencies, often including valuable material on the operation and orientation of their programs. An example of such a study is the doctoral dissertation of Professor Julius Wolff, Jr., Minnesota Conservation, or The Administration of Natural Resources in Minnesota, (1949). Studies of this kind appear frequently, and it may be assumed that most states have been surveyed in this manner.

Public Documents.--Reports of legislative committees and administrative agencies serve both to cite research and to present statistical material which can serve in research. Some recent government publications are part of the bibliography of this paper. In addition, some of the publications of data by public agencies are included.

Technical and Professional Journals.--Treatment of topics related to the focus of this conference can be found in a variety of publications of a technical or professional interest in government. Three might be mentioned here, illustrating the varied nature of their subject matter, by Elton Andrews and William Lipman in State Government (autumn, 1960); Alfred Balk in the National Civic Review (Oct., 1960), and a symposium on the Federal Youth Conservation Corps proposal in Congressional Digest (Dec., 1960). Congressional Quarterly provides a source of current information on legislative progress and content of legislation.

Case Studies.--More relevant to the problems of translating social science research into public policy are the accounts of how particular programs have been legislated or administered. Stephen K. Bailey's "Congress Makes a Law" (1950) is a book-length study which has in some measure served as a model for subsequent efforts. This line of approach has been fostered by the Inter-University Case Program of Publication of Cases in Public Administration and Policy Formation.

Russell P. Andrews' "Wilderness Sanctuary" was the thirteenth in the series, appearing in 1953 with a revised edition published in 1954. Andrews, a staff assistant in the White House in 1949, examined at length the origins and progress of Executive Order 10092 prohibiting air flights into the Quetico-Superior Roadless Area. The revised edition incorporated results of court tests of the order. The Andrews study outlined an administrative policy decision. It shares with other case studies an attempt to relate such decisions to interest-group and political pressures influencing the decisions. The best-known case studies in practical politics, sponsored by the Eagleton Institute and published by Holt, Rinehart and Winston, include a variety of studies of legislative decision making. Monographs on state legislatures are growing in number, the most recent and an outstanding example of its kind being that of Kenneth Janda, Henry Teune, Melvin Kahn, and Wayne Francis on "Legislative Politics in Indiana" (1961). Such studies typically seek to learn how social origins, political attitudes, and interest-group connections influence legislators and, through them, their decisions on public policy.

Legislative Behavior and Decision Making.--John C. Wahlke and Heinz Eulau collaborated to edit "Legislative Behavior: A Reader in Theory and Research" (1959), which includes a variety of materials relating legislative decisions to the political, social, and psychological bases of the legislative processes. None of the items directly relate to formation of policy on forested-area use. But at the same time, the general kinds of information can serve as a guide for people seeking to affect legislative decision-making.

The field of decision-making, itself, has become a central concern for some political scientists. Methods of study range from case discussions to application of scalar analysis, factor analysis, and mathematical theory of games to predict voting. The general argument is that legislative votes can be studied as responses to a finite set of forces. By setting index values on the forces, voting trends can be predicted.

Official Actors.--Government acts both as proposer and executor of policy. The Congress passed Public Law 85-470 of the 85th Congress, second session in June, 1958. The law set up a National Outdoor Recreation Resources Review Commission and instructed it to study and recommend ways to preserve and develop the outdoor recreation resources of the nation. The work of the Commission is so diverse that it cannot be described here. But from this work, new policy recommendations will grow. The Commission also will serve as the source of additional information about needs, trends, and policy directions.

Another official actor in the process might be mentioned--President Eisenhower's Commission on National Goals. The Commission recommended programs of action in the 1960's, a primary mention of forested areas being in the chapter submitted for the consideration of the commission by Catherine Bauer Wurster. She noted that, if present forest preserves were not rapidly expanded, "wilderness slums" might result by the 1970's. Morton Grodzins of the University of Chicago described the complication of policy-making by the federal system of U.S. Government. This system, requiring coordinated effort by both national and state governments, has led many other policies to fall short of achievements sought. In anticipation of such problems, the Outdoor Recreation Resources Review Commission focused a part of its study upon state administration of such resources.

Research in political science suggests that translation of social science knowledge into public policy is accomplished through group activity. Group action is the source of legislative impact. While little has been done to provide a "cook-book" set of procedures for producing desired policies for use of forested areas, there is a wide literature from which productive suggestions for strategy can be made.

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PROBLEMS IN PLANNING RECREATION IN RELATIVELY UNDEVELOPED AREAS

by A. F. Helmsley[1]

For purposes of clarification, one should first make certain of the meaning, as intended in this paper, of "recreation" and "undeveloped" areas. "Recreation" shall include camping, canoe-tripping, fishing, hunting, hiking, photography, loafing, and simply appreciating the outdoor environment. Intended, therefore, are the recreational pursuits which are more or less passive and which cause little disturbance. Such a definition excludes the playground type of activity and stresses those which cannot be enjoyed at home. Involved, also, are peace, solitude, and the inspirational enjoyment of the natural environment.

"Undeveloped Areas" exclude the summer resort type of country with its commercial lodges and hotels, its private cottages, its roads, and its general congestion which one may experience during any holiday weekend. It refers to areas free of cottages, hotels, and resort centres and includes the large areas of Crown Lands which may border a highway or a railway which provide access points to the interior. These lands are also accessible by aircraft. Undeveloped areas are also found in the larger provincial parks.

Returning to the original subject of planning this recreation in these areas, it should be pointed out that, in Ontario, there is very little planning of the actual recreation. What does occur, however, is planning for the recreational activities. This includes the provision of recreational lands and certain facilities for public use. We leave the recreation, in itself, to the public.

The large Crown Land Recreation Areas are controlled by a zoning system which recognizes their location and resources. In areas designated as Wilderness Zones, tourist outfitters' camps and outposts are prohibited in order to maintain the wilderness atmosphere. In other zones, tourist outfitters' camps are restricted in number and size to conform with the natural resources of fish and game. Such camps provide accommodation, outpost camps, guides, equipment, and transportation, either by canoe and portage or by aircraft. In all cases, persons entering any of these areas require a travel permit, for which there is no charge. The permit informs the authorities of the locations of woods travellers and is a precautionary measure in time of high fire hazard when travel may be banned.

In a consideration of provincial parks, of which there are 80 in Ontario, we may place them in three groups. One group includes the smaller parks which may vary from a few acres to a few hundred acres. Some of these have been operated as parks by other agencies and have been acquired as provincial parks. Usually these are located near centres of population and consequently receive a great deal of use. For this reason, they receive rather intensive development and can be dispensed with in this paper.

A second group includes larger parks having areas of from several hundred acres to several thousand acres. These have been Crown Lands and, because of location, scenery, and recreation potential, have been established as provincial parks.

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The third group consists of the very large parks. These are Algonquin (2,910 square miles), Quetico (1,750 square miles), Sibley (63 square miles), and Lake Superior (520 square miles).

In the large parks of the second and third groups, the emphasis is placed upon the natural environment of the parks. Planning, therefore, allows for a certain amount of development for the provision of certain necessary facilities at specific use-areas within the parks. This leaves other areas untouched but accessible by scenic roads, trails, or water routes. Such areas retain the park theme, as opposed to the use-areas containing campgrounds, picnic grounds, road systems, control points, park offices, maintenance buildings, parking areas, beaches, concessions, boat dockages, drinking water, washrooms, garbage disposal, and all the amenities essential for public use.

In presenting the problems of planning for recreation in provincial parks, we now return to our definition or recreation to treat each activity separately.

1. Camping

This originally, was simply a means to an end, usually hunting and fishing. Today, however, it seems to have become an end in itself, goaded on by the attractiveness of modern campgrounds and the manufacture of a variety of camping equipment and gadgets. To many, camping in itself is the recreation which has become a full-time job with all the housework one would find at home.

Campground camping is steadily increasing in popularity to make most facilities bulge at the seams during peak holiday periods. Overflow camping areas are required in most parks, and occasionally some parks are closed with no room available. More development could provide more campgrounds, which could lead to the destruction of the park environment. There has to be a limit, and the question often raised is: How much development? Where does one draw the line? There is probably no formula for this, and the answer probably lies in more parks.

There is a research problem here in determining the future needs of future populations. At present, the Ontario Provincial Park system plans to establish provincial parks along the highway routes so that they are approximately 100 or 150 miles apart. Some present parks are closer than that. Will this be sufficient in 5, 10, or 20 years? Will public recreational needs change, for example, to travel abroad? Probably, due to the human factor, any prediction may only be a wise guess, at best; but at the moment, such a prediction would be useful.

2. Canoe tripping

This, from a purely personal view, is camping at its best, but even this is becoming a crowded activity in the larger parks. Associated with the thousands of wilderness travellers are problems of control, sanitation, and vandalism. Daily or even weekly maintenance of the canoe route campsites, because of the inaccessibility of the country, is impossible. Even monthly campsite maintenance seems almost useless. The problem seems to lie in the type of canoe-tripper who has taken up this form of recreation. Garbage is no longer burned; tins are not buried; latrines are not dug: and live trees are felled for no reason, other than for the sheer recreation of chopping. There seems to be a complete disregard by some people for the environment and what it has to offer.

Some of the trouble lies in the type of canoe-tripper and also in the large numbers of canoe-trippers. In view of the maintenance problems, the onus clearly rests on the tripper to keep and leave his campsite in good condition. Many do, but they who do not undo all the good. While cleanliness can solve some of the problem, the sheer weight of numbers indicates that on each campsite one can bury just so much refuse and dig just so many latrines. In rock country, the problem is even greater.

3. Fishing

We are not concerned here with the real fisherman who knows where to go and how to fish. There is some demand, however, for family group fishing. This is usually preferred without a boat, for safety reasons, and so calls for easy access from a dock or a bridge. In provincial parks, there have not yet been any developments to observe this need.

There has been the feeling, in larger parks, that the fishing is no good unless one gets into the hinterland which is available only to the canoe-tripper. Pressure on easily accessible lakes is understandably greater, and this year a heavy stocking programme has been undertaken to make large-size fish available along roadside lakes.

4. Hunting

In the northern recreational areas, hunting of moose, deer, and grouse is carried on freely within the usual limits of the game regulations. With very few exceptions, there is no hunting in provincial parks because in most of Ontario there is enough land available outside parks. The exceptions involve only three provincial parks in the south where public waterfowl shooting areas are in great demand. In two of these, for a small seasonal fee, hunters are permitted access to the marshes and lakeshores. In the third, a system of duck-blind rentals and limits spaces the wildfowlers.

This year will see, experimentally, pheasant shooting on a "put and take basis" in two provincial parks with a controlled number of hunters and shooting days.

5. Hiking

There has been a demand, in the last few years, for 3- and 4-day hiking trails in the larger parks. This has largely been a result of the European influence. Such trails are planned, but at present the only trails are of 2 and 3 miles in length. The longer trails, however, again bring the question of maintenance on campsites and along the trails.

6. Appreciating

This, in view of vandalism and misuse of canoe route campsites, would seem to have become a lost art. Actually, the wrong-doers are undoubtedly in the minority and the vast majority of recreationists appreciate the parkland environment. Most visitors appreciate the campsites, the swimming, the boating, and the "getting away from it all" atmosphere. Few, however, probably feel a deep understanding of the natural environment with its inspirational enjoyment. Perhaps it is there, but it is unexpressed.

To familiarize visitors with the park story and its environment, park interpretive programmes of museum exhibits, conducted trips, illustrated talks and labelled trails attempt to make the recreationist more understanding and more appreciative of the out-of-doors. In this way, the visitor is introduced to another recreational form with which he is probably not very familiar and sees things he would ordinarily miss.

Interpretation, however, requires a special staff which, in some parks, is gradually becoming overtaxed. Many more people are attending the interpretive activities. This is a good thing, but a conducted, interpretive trip with 175 people soon becomes just a walk in the woods. Museums require redesigning to cope with tremendous crowds. Illustrated talks frequently have standing room only and labelled trails become pounded into near-oblivion. The answer may be in the curtailment of interpretive services during the busy period or in the reduction of quality to provide quantity on a mass communication basis. Interpretation is sufficiently important, however, to warrant every effort to make the service available to park visitors.

In any consideration of undeveloped areas for recreational purposes, we can not neglect the natural resources which provide the necessary environment. These resources, in addition to being recreational assets, are also considered in the economy of the land.

It is no longer possible to refer to the forest primaeval, unspoiled forests, nature's wilderness, and all the other stereotyped phrases because, technically, they no longer exist. The forests which are referred to are the results of logging, and outstanding forests are the results of efficient forest protection. In the interests of the general economy and good forestry practices, it is recognized that the forests should be harvested. Recreation, however, has a stake in the same forest and it would seem that forestry and recreation are incompatible. This could be solved by a "manicure" forestry operation but, economically, forest operators are not interested in this method of extreme selection. The forests of large parks cannot be removed from the economy, and so a cutting policy has been developed to reserve trees within certain distances of lakeshores, canoe routes, and portages, and on skylines and in areas of park development. This recognizes that canoe-trippers seldom, if ever, get more than a few yards from water at any time.

Important areas from the viewpoint of scientific and/or historical significance may be reserved within a provincial park under the Wilderness Areas Act. These special areas, now numbering 28, also occur outside provincial parks. If a Wilderness Area is less than 640 acres in area, its natural resources are reserved from exploitation.

Mining, because of its character, is a problem in recreational lands. Ideally, only if the mineral occurrences are of national importance or only if a national emergency requires the mineral, should mining enfringe on parklands. This is not always the case, however, and concessions under certain circumstances must be made for the operation of mines in a contribution to the general economy.

In Ontario, the chief problem involved in planning for recreation in relatively undeveloped areas is to keep the areas as undeveloped as possible and still provide use-areas, as access points. Criticism has been levelled by some groups of visitors who feel that access roads should be available so that they, as well as the canoe-tripper, can make use of the interiors of larger parks. Similarly, tourist outfitters feel that they should be allowed to leave boats on interior lakes to facilitate their guests who wish access to the interior fishing without the difficulty of portaging canoes. Aircraft are restricted to landing on certain lakes on the peripheries of larger parks to avoid over-use of the fishery resource in interior lakes and to maintain an atmosphere of solitude in keeping with the park theme.

Many people, who want easy access to the interior, seem to forget that such access would destroy the very thing they seek. We consider the interiors of the large provincial parks as precious and worthy of protection from easy access. The numbers of people who use wilderness travel indicate that these recreationists, although a minority group, are increasing yearly and deserve consideration of their need for roadless areas.

Finally, one could analyze the few problems outlined in recreational planning as lying chiefly in the field of public relations.

An understanding of recreation in undeveloped areas is required by the actual user of such areas, so that he may have a higher regard for the natural environment and for his fellow wilderness travellers. The problem is promotional and requires an educational programme to develop a philosophy of proper park use. The interpretive programmes could serve in this field but very few canoe-trippers and interior fishermen make contact with the programmes.

Actually, as the numbers of visitors increase, the quality of wilderness recreation will decrease. It seems impossible to have high quality wilderness recreation for a large number of people in the same general area. The day may come when canoe-travel in wilderness parks will be by reservation only under a licensing system to limit the numbers. Perhaps people may become anxious enough concerning rubbing shoulders with each other in wilderness parks that they will be to discouraged to continue.

All this is not a happy thought. We hope it does not happen, but it could.

PROBLEMS OF INTEGRATING RECREATION INTO MULTIPLE USE MANAGEMENT ON THE OTTAWA NATIONAL FOREST

by John O. Wernham[1]

I wish to first give you some background of the Ottawa National Forest. This may assist in better understanding its problems of integrating recreation into multiple use management.

These problems are not fully representative of those of all the 154 national forests. They do not include all the problems on the 7 national forests in the Lake States. However, the problems to be outlined in my further discussion are found in varying degree on many of the Lake States' national forests.

The Ottawa is located at the extreme western end of the Upper Peninsula of Michigan. By highway travel from the forest's headquarters at Ironwood, it is 601 miles to Detroit, 408 miles to Chicago, 311 miles to Sault Ste. Marie, and 272 miles to Madison. These are important distances to the recreation visitor.

Acquisition of lands on the Ottawa began in 1927. Today some 861,000 acres, or about one-half of the area within the forest's boundaries are government-owned. Because of lack of funds, direct purchase of land has not been very active since World War II.

Many parcels of private land are intermingled with the national forest lands. Sub-surface mineral rights are generally in private ownership for the national forest land in the vicinity of the southeast and west parts of the forest which adjoin, respectively, the Menominee and Gogebic iron ranges. Also such rights are present in the north-central area where there is active copper mining.

Extensive land holdings in some scattered large blocks and in many small tracts are owned by mineral companies, paper mills, hydro-electric companies, lumber companies, and a few other large owners.

A majority of the good lake-front property on the Ottawa is in private ownership. Much of this is in summer home use. There is a considerable area of commercial forest land in small ownerships that is acquirable. Much of this is needed to consolidate national forest ownership to reduce cost of cadastral surveys, aid in providing road rights-of-way, and make for more efficient management of all surface resources. Some of this land is needed to round out potential national forest recreation areas.

There are few self-sufficient farms within the forest boundaries. The economy has been mostly based on mining since the 1870's. Mining employment has been decreasing for nearly half a century. Even more drastic cutbacks are now threatened in iron ore mining. The economy of this area in the future is certain to be more and more dependent on forest resources.

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Most of the acquired national forest lands had been or were close to being tax delinquent. Their history had been one of clear-cutting and destructive fires.

In the long run, the forest will convert to nearly 70 percent hardwood stands. There are 65,000 acres of coniferous plantation. About 7 percent of the area is swamp, marsh, or muskeg. Tight clay soils are predominant, although there are a number of large areas of light sandy soils where most of our lakes are located. Pole-or sawtimber-size stands are present on over one-half of the national forest lands.

In fiscal year 1960 the forest's timber cut was 79,200 cords of mostly pulpwood and 7.018 million board feet of sawtimber. It will take upwards of another century to attain close to optimum timber production capacity from these lands. By then, the annual allowable cut of timber should be three to four times what it is today and may approach 200 million board feet. At least one-half should be sawtimber. At present the forest can only fill about 7 percent of the full requirements of local sawmills. We about meet our allowable cut of aspen and coniferous pulpwood. We have a large surplus of hardwood pulpwood and chemical wood.

Increased emphasis on producing timber from the national forests is clearly indicated in both the "Timber Resources Review" and the more recent "Program for the National Forests". The latter also presents need to increase recreation development.

The national forests return 25 percent of gross receipts to the State for distribution to counties for school and road purposes. The five counties receiving 25 percent funds from the Ottawa are hard put to meet budgetary needs. They desire to have maximum timber production on the national forest, and timber is the main source of receipts. In fiscal year 1956, our year of highest returns, the 25-percent fund amounted to over $100,000 or 12.17¢ per acre. Last year it was $74,622 or 8.67¢ per acre. Over $1 million had been returned to the counties through fiscal year 1960. Other benefits from the national forest to the State and counties appear in the form of indirect contributions: fire protection, road maintenance and construction, development and operation of recreation facilities, employment of local people on protection and management projects, making lands available for use by fishermen and hunters.

There are nearly 60,000 big-game animals--deer and bear--on the forest. Grouse and rabbit hunting are common sports. Stream fishing for trout is a high use. Lake fishing is generally good. Fishing and hunting can be greatly improved by habitat improvement. Part 2 of Operation Outdoors is a National Forest Wildlife program of importance in the "Program for the National Forests". This wildlife phase has been recently announced. As a long-range program it fills a real need to increase emphasis on national forest wildlife habitat improvement.

There are 26 lakes of over 100 acres and 200 lakes over 10 acres in size on the forest. These contain 17,600 acres of water. There are 165 miles of shoreline in national forest ownership on these lakes. Less than 25 percent of this shoreline is high land of a type offering opportunity for recreation use.

Seventy-eight miles of rivers flow through national forest land. In addition there are many miles of smaller streams. Some 1,800 miles of rivers and creeks flow through all ownerships within the forest boundaries. Canoeing opportunities are good on a few streams.

The Ottawa has the deepest snowfall of any of the national forests in the Lake States. Large skiing developments have started since World War II. Only one major ski area uses national forest land to date. The future is expected to bring additional skiing interest to these lands where good winter sports areas can usually depend on 10 to 15 feet of snowfall in the average winter.

About 500 miles of the forest's primary road system remain to be constructed. Completion of these roads will be of great benefit to the recreationist. There are nearly 4,000 miles of secondary roads planned, mostly for timber hauling. These will also be important to hunters, fishermen, and hikers but are expected to take at least 50 years to complete for summer use by vehicles. Road construction on the 500 miles of primary system proceeds slowly and at present rates may take over 25 years to complete.

The Ottawa has 10 picnicking areas developed that have a daily capacity of 534 persons; 13 camping areas with a daily capacity of 438 persons; and one organization camp with a daily capacity of 96 persons. Seven of these areas have swimming beaches. There are an additional 110 lakes that offer a good potential for recreational development.

By the year 2000, the Ottawa is estimated to have a need for a developed capacity of 2,000 family groups in camping and picnicking areas. This is a 10-fold increase. There will be enough good quality sites to meet these estimated needs. Later developments after the year 2000 would soon be faced with need to use lower quality sites or acquire additional lands supporting good sites.

Recreation visits last year on Ottawa National Forest lands were estimated at:

5,500	campers	5,200	persons gathering berries and other forest products
29,800	picnickers	73,700	fishermen
27,600	swimmers	47,000	hunters
600	canoeists	69,600	other miscellaneous users
14,000	skiers		
900	organization camp users		

The total recreational visits to the forest last year were estimated to be 273,900. This represented a 91 percent increase over 1950.

From my foregoing remarks on the forest's background you will have already foreseen some of the Ottawa's problems of integrating recreation into multiple use management.

The Ottawa isn't under the same amount of pressure from heavy recreation traffic as are national forests closer to large population centers or as the Superior National Forest in Minnesota with its unique canoeing opportunities in the land of the voyageurs.

However, the Ottawa is unable today to meet fully and adequately the demands of its recreation visitors. We have never built much of a reputation for recreation opportunities as we have barely begun development of our recreation potential. There is yet available to the public little access to national forest waterfronts. Under an active program of developing new recreation areas after those partially developed by the CCC's in the 1930's are rehabilitated, we will soon have earned a reputation with recreationists and will have a continuing difficult time in keeping up with recreation use pressures.

Under the push of the "Operation Outdoor" program, initiated in 1957 and now included in the "Program for the National Forests", known as "Operation Multiple Use", we have been making significant but too slow progress in rehabilitating recreation facilities. Revised plans for existing recreation areas are nearly complete. Plans for new recreation areas will be prepared and approved in this coming fiscal year for many high-priority developments.

We have recently completed an extensive study to locate and map areas having sufficient recreation potential to be considered for development by the year 2000.

These recreation area data are very helpful in the preparation of ranger-district multiple use plans. The plans, started last year on a more exacting basis than in any previous attempt to correlate all resource management, will be completed this summer.

The ranger-district multiple use plan requires periodic review and revision. Today's knowledge will be augmented by new research findings. More detailed surveys, coupled with such research findings and pressured by increasing demands on forest resources, will bring changes in ranger-district multiple use plans. And yet, many items presented in these plans are not likely to require major revision. Full implementation of the plans will not come quickly.

National forest campgrounds, picnic grounds, and similar facilities are mostly water oriented. On the Ottawa forest, such recreation developments will be best located on lake shores. There are fewer opportunities for such development on streams. Lakeshore property in private ownership is advancing in value. Competition to own good waterfront is increasing. In some areas local taxes on lake properties have mounted in recent years to a point that is restricting ownership from many previous owners in the middle and lower income brackets.

Pressures are increasing to make national forest waterfront available to summer home use. It is desirable to expedite development of more campgrounds, picnic areas, swimming beaches, and fisherman access for public use to better display the purpose for which these lands are being held, even though other similar lakeshore property will not be developed for many years. There is still a considerable amount of undeveloped lake property in private ownership that is acquirable by summer home interests.

There are some summer homes under permit on national forest waterfronts. If we had been more farsighted at the time of permit issuance, we would have withheld many of these sites for their future higher public-type recreation use. Summer home owners sometimes strongly resist development of public campgrounds, picnic areas, swimming beaches, and boat access on a lake, even though privately owned or special-use-permit waterfront may be only a small part of the entire lake shore.

Lakes on the Ottawa are generally small for those where the Government owns waterfront. These small lakes can be easily over-developed. Some cannot withstand heavy fishing pressures. Much is yet to be learned of more effective and inexpensive methods for maintaining high gamefish production in these lakes.

We have a number of freeze-out lakes where there is opportunity to secure fish production by raising water levels. This will require flooding of adjacent lands, some of which should be purchased or flooding easements obtained.

The Michigan Department of Conservation has cooperated in the creation of new water improvements and in the improvement of others. More of this water development work will be needed.

Fish spawning requires that some waterfronts be left in their natural state or even improved for fish habitat. Recreation development planning must give consideration to such needs.

It has been said in the Lake States that there is nothing wrong with recreation that can't be improved by better fishing. Although there are more fishermen than any other single type of recreation visitor on the Ottawa, the fisherman is also attracted to the area by other recreation interests.

Stream improvement is a big job ahead of us. It will be very expensive. There are many miles of steep, eroding clay banks that have been in this condition for centuries. Many channels have been choked for years with logs and debris. Once-good trout streams will no longer produce today.

Cooperative programs with the Michigan Department of Conservation are hoped to expand in the future and include such stream and lake improvement jobs as aquatic weed control, removal of rough fish, fertilization of lakes and streams, debris removal, water level stabilization, and streambank stabilization.

Availability of good fishing is ordinarily a very strong point in determining the priority for developing a campground, picnicking area, or boat-launching site on this forest.

Road planning demands and receives careful consideration of all kinds of future use demands. Recreation is an important use on many roads. More thought should have been given in some past cases to road locations, construction standards, better cross drainage in swamp fills, parking areas at overlooks and near water, and treatment of roadside aesthetics to better serve today's and tomorrow's recreationist.

Our detailed recreation area development plans come slowly. When available they in some cases require changes in existing roads and road plans.

Summer recreation traffic, when combined with heavy logging traffic on some forest roads, presents a safety problem. More roads and higher standard roads will ordinarily be a feasible solution if sufficient road funds are available. There may be infrequent need to restrict national forest timber sale operators to hauling outside of the heavy recreation season. There may be occasional need to close a recreation area temporarily to permit a logging operation to proceed. Special safety signing would sometimes permit all types of traffic to use a problem road.

Roadside and waterfront zones, having present or potential recreational values, should be managed with an eye to maintaining and improving aesthetics. Cutting of trees in these reserved strips is generally restricted to dead, dying, or defective trees, the removal of which will improve the area from the standpoint of scenic and recreational values and public safety. Timber management plans give consideration to restricted timber production from such zones.

As we devote more attention to having roadside zones look their best, the forester, the engineer, and the landscape architect must work more closely together. Practical considerations for scenic roadsides can frequently be met in some timber stands under regular timber management guidelines. These stands will have great appeal to the majority of recreation visitors. Better clean-up of logging debris will be necessary in these zones than on other parts of the sale area.

Reforestation in roadside zones should take advantage of selected fast-growing nursery stock. Fertilization of such roadside plantations and proper schedule of release and other cultural practices should be given high priority consideration.

Forest roads which cross private lands, especially forest lands, may need procurement of a greater right-of-way width than the usual 66 feet if the road is heavily used by recreation traffic and if the private owner is not likely to give sufficient consideration to roadside aesthetics. Control by the Government of such additional roadside zonal widths would be desirable through ownership in fee.

Special timber harvesting procedures, that give primary attention to maintaining the beauty and safety of roadside and waterfront zones, will ordinarily treat timber production as a secondary use on primary recreation routes and use areas.

Many potential recreation areas are now in timber cover that will not be aesthetic or will contain hazards for the recreation visitor. Overmature sawtimber is especially hazardous. Short-lived aspen and off-site stands may need conversion to species that are longer lived and have greater beauty. Treatment in advance of establishing recreational facilities may include timber stand improvement, clear cutting, and planting according to a detailed landscape plan. Adequate lead time should provide satisfactory timber growth by the time recreation use begins. As much as 25 years of lead time could be used to advantage on some sites where planting is necessary.

Over-browsing by deer is evident on many developed and potential recreation sites. Deer-herd control is handled by the State. The national forest can assist by making deer concentration areas accessible, by providing more campgrounds for deer hunters, and by improving deer habitat. Winter deeryard food conditions are generally poor on the forest, and research is necessary to find methods for maintaining these yards in an improved condition and within reasonable limits of cost.

A heavier influx of recreation visitors might be attended with the threat of more forest fires. Because most recreation visitors come to the Ottawa in other than the very hazardous spring and fall fire seasons, there has been no significant effect on fire losses. In summer drought years or if increased visitor traffic occurs in the spring and fall, increased fire prevention efforts will be needed. In any event there is a need to fireproof recreation use areas.

The beaver ponds of past decades and even centuries have left a problem of restoring tree cover on difficult planting chances. Good tree cover is needed along the streams to give better shade on trout waters, provide improved aesthetics, and permit easier access by the fisherman than through dense tangles of tag alder. The conversion of abandoned beaver flowages, now dry, to merchantable timber species would assist the timber economy on thousands of acres. Research is needed to find more satisfactory methods of reforesting these areas. Interest in beaver trapping is waning as fur prices stay low.

More research is needed to determine exact timber management guideline modifications that should apply to benefiting wildlife habitat without serious effect on timber production. To leave openings in a forest stand for wildlife use is not enough. Permanent openings must be planned and maintained for maximum production of wildlife habitat benefits. Determination must be made of the value to wildlife of secondary roads and under what circumstances closure of such roads to vehicular traffic would be justified.

Recreation area development planning should consider any likelihood that a subsurface mineral right could be exploited and result in damage to the surface. There may be need to extinguish the mineral right if high recreation values are involved. Ordinarily this is not a problem until a definite attempt to mine is evident. On the Ottawa there is some chance that future mining will conflict with use of recreation areas.

Substantial acreage will be needed for recreational areas, roadside and waterfront zones, and special fish and wildlife areas, such as permanent openings and research areas. Good management will permit some secondary benefits to other uses. More research will determine how to increase such benefits. Good recreation and multiple use planning must not waste acreage.

The national forests should provide primarily forest-type recreation. Large city-type parks and golf courses will not do. We must learn more about user demands and provide a balanced choice of recreation areas. We hope to keep a number of small camp and picnic grounds but must also operate many of large enough size to allow more efficient maintenance.

Adequate facilities must be provided so that the recreation resources can be enjoyed without endangering public health and safety, without overcrowding, and without damage to national forest land and resources.

Recreation use must be coordinated with other resources of the forest in order that the sustained yield, multiple use objective of national forest management may be attained.

The northern Lake States need more tourist dollars. More important is an improved overall economy, much of which must be based on all manner of forest resources.

There have been few year-round local jobs based on forest recreation, but these have, when added to other seasonal work, helped many people. Future increases in recreation industry employment are expected to be significant.

The tourist dollar received by the local merchant in the period mid-June to Labor Day is important. Some merchants receive as much or more income from visiting deer hunters in the 2- week fall season. Some businesses obtain important earnings during the skiing season.

We are becoming a nation of city dwellers. The city dweller's need to escape the pressures of crowded living is putting increased pressure on forest recreation. The city dweller's right to obtain recreation use on the national forest must be considered along with the needs of the local economy that also depends on forest resources.

Economic returns for each area of potential recreation use must be determined and compared with economic returns for the area if put to other competitive uses. Such values must be forecast far in the future. Procedures for making such analyses need further study and improvement. Consideration should be given to impacts on the local economy as well as wider-spread benefits elsewhere. Also we cannot overlook the possibility that there may be access charges made for some types of national forest recreation areas.

Methods must be found to obtain accurate current recreation data at reasonable cost. Methods must be found to accurately estimate future recreation use by different types. I understand that the Lake States Forest Experiment Station in cooperation with the Superior National Forest initiated a study last summer to determine an effective, simple, and inexpensive method of determining and evaluating the recreation use in the famous Boundary Waters Canoe Area.

We need to know how to better determine in advance the carrying capacity of each potential recreation area. This would consider limitations on interference with, and from, other uses as well as limitations on all types of recreation use involved and to provide assurance that recreation values of the area will not depreciate.

In conclusion I wish to make two statements.

1. Good management of national forest resources means correlation and fullest practical production of recreation, water, wildlife, wood, and other resources to provide the best possible balanced benefits to our citizens forever. In shorter terms, this is multiple use on a sustained yield basis.

2. We must continue to improve: recreation facilities, roadside aesthetics, roads, interpretive services, fish and game habitat, protection against fire, insects, and disease, watershed management, research, land use, lands adjustment, multiple use management, and the overall job of recreation management on the Ottawa National Forest. All of these things will, in varying degree, add to the benefits to be enjoyed by a recreation visitor.

PROBLEMS OF RECREATION IN DEVELOPED AREAS

by Roman H. Koenings[1]

Our interpretation of the basic purpose of a state park system is to preserve the outstanding geological, archeological, historical, memorial, and scenic areas of statewide significance for the enjoyment of present and future populations of the state. This broad purpose of a state park system is still the fundamental premise upon which an intelligent state park program must be predicated or a state park system will degenerate into a political park barrel affair with little rhyme or reason to its planning, development, maintenance, or operation.

Since World War II the use of most state parks by the public has not been according to any basic plan but has been directed by demand for recreational opportunities. People have used the state parks in ever-increasing numbers and have disregarded the basic purpose for which the state park was established. The fact that a particular park was established to preserve the highest waterfall in the state, some outstanding geological feature, or some important archeological discovery means little to many people who now frequent the parks. This may be particularly true of the campers. Many campers maintain they go camping to get close to nature, yet they demand flush toilets and electrical outlets and bring their TV sets with them, which makes us believe that their camping is not necessarily the desire to commune with nature but rather an inexpensive vacation. To solve the problem of preserving the outstanding natural features of the state, it is our recommendation that recreation areas be incorporated into the state park system. These recreation areas should be of considerable acreage, scenic, and have water for recreational purposes available within the boundaries of the area.

In addition to the need for more recreational areas to furnish the opportunities for the demand for outdoor recreation, there are many other problems facing the managers and supervisors of a state park system.

I am sure some attention has been given to these problems by various organizations and governmental agencies. Several articles and publications are available such as the report by S. T. Dana--Problem Analysis of Research in Forest Recreation--and the publications by the National Conference of State Parks, the American Institute of Park Executives, and the Great Lakes Park Training Institute held annually at Pokagon State Park in Indiana.

The most apparent problems as suggested by our personnel are:

Operations

Improvement of maintenance equipment for greater efficiency.
Determining possible methods to avoid vandalism.
Utilization of more modern methods and materials for more efficient construction and reduction of maintenance costs.
Improved methods of control of insect pests.
Improved methods in the use of selective herbicides for trail maintenance, overlooks, and vistas, and the control of undesirable vegetation such as poison ivy, etc.

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[1] Superintendent, Forestry and Parks Division, Wisconsin Conservation Department.

Improved methods of control of aquatic vegetation, snails which carry swimmer's itch, and leeches on public beaches.
Development and use of effective deodorizers.
Development of shrubs that could be used as effective barrier plantings without being too obvious.
Development of soil binders for roads and trails.

Management

The problem of allocating water frontage and water areas in relation to the land area available for recreation.
The problem of hunting on park areas not intensively used for recreation *per se*.
The problem of intensively developed areas to primitive or scientific areas.
The problem of formal training for park managers.
The crowding tolerance of park users.
The amount of use or abuse an area can stand. This should be done by soil types and vegetative cover.
The development of more accurate predictions on use needs and demand. More information on changes in population and shifts in population centers.

Development

The problem of zoning for recreational purposes.
Determining the type of recreational facilities or areas the public wants in its state parks or recreation areas.
Problem of park layout as it pertains to traffic flow, movement of people, and public relations.
Problems resulting from changes in the social composition of the population, transportation, increased income, and other factors affecting long-range planning.

Economic and population data

Value of parks as recreational areas--tangible values, intangible effects and values.
Relationship of outdoor recreation to the behavior of the public in terms of delinquency, etc.
Data pertaining to increased use of parks by existing populations and potential use of parks by anticipated populations.
Effect of urbanization and loss of recreational opportunities in areas outside the state or region on demand for recreational opportunities.
Problem of developing survey techniques to obtain accurate information and to broaden the statistical base for developing conclusions from data collected which would allow a comparison of recreational users in different regions and different points of origin.
Problems in transportation changes and improvements.
And last, but not least, the problem of developing a method of adequate long-range financing so long-range planning can be effective.

PROBLEMS OF PUBLIC RECREATION ON PRIVATE FOREST LANDS

by T. R. Powell[1]

It has been said that Joyce Kilmer's poem "Trees" was indirectly responsible for setting back practical forest management for at least a generation. Many well-meaning people did not seem to realize the trees do not live forever--that "the nest of robins in her hair" would be replaced by a woodpecker tapping away on a bald head--that "the leafy arms" once "lifted to pray" would eventually lose their leaves and drop to the ground to rot. The thought that a tree is like a friend and that there comes a time when we have to say goodbye is not a pleasant one but nevertheless one which has to be faced.

Tree and wilderness worshippers are still a problem, but considerable progress has been made in getting some laymen to accept the fact that cutting a portion of our forest each year to create an even distribution of trees in all age classes is the only way we can sustain the yield of all forest uses.

Now along comes this scare about the population explosion, more leisure time and no place to spend it, which threatens to set back not only forestry but the advancement of our whole national economy.

There is no disputing the fact that our population is expanding rapidly and that more and more people are looking to the forests for recreation. But, this is not the only land use which is expanding--more people need more land for factories, roads, homes, farms, and, last but not least, to grow more forest products.

If we are "to obtain the greatest good for the greatest number in the long run," the problem of one land use such as public recreation cannot be solved without careful consideration of all other uses. To do this intelligently, we should first classify each segment of land as to its possible uses.

Secondly, we need a realistic--not a sentimental--evaluation of each use. As sad as it may be to see a wonderful duck marsh turned into farmland, the chances are the change will benefit many more people than it hurts--from my experience as a duck hunter, I know it should provide more food.

Before we go overboard in tying up extensive areas for public recreation, careful evaluation should be made of the benefits to be gained from private recreation. Just how far should we go in curtailing the possibilities for private individuals to buy or lease land to build cottages and provide their own recreation for their family and friends? This type of recreation adds to the tax monies rather than detracts from them. Each Wisconsin cottage contributes from $1300 to $1500 per year to the local economy, while half of the park visitors spend nothing and the expenditure per car averages about $16 per visit. It would take nearly 5,000,000 car visits to equal the total amount spent by cottages.

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[1] Administrative Assistant, Woodlands Department, Kimberly-Clark Corporation.

Since we now have all the land we are going to get until travel to the moon or some other heavenly body is possible, it also behooves us to put each acre of land to as many uses as possible--the popular idea of multiple use.

Generally speaking, industrial forest management is based on these concepts. Land classification is accomplished in the process of acquisitioning land for the primary purpose of growing forest products. Since the cost of the land has to be justified by its timber-growing capacity, very little land with a higher value for other use is acquired at the time of purchase. Where other more valuable uses develop after acquisition, you will find that in most cases the land involved can be obtained through either purchase, lease, or trade. Here again the price the purchaser is willing to pay provides a built-in yard stick as to valuation for the various uses. These uses include among others skiing areas and resort, cottage, and cabin sites. I might mention here that some companies in the Lake States will lease sites for hunting cabins, but none that I know of will lease exclusive hunting rights.

Industrial forest lands are also ideally suited to multiple use.

Cutting mature trees each year and making provision to replace them creates the distribution of trees of all age classes so essential to the sustained yield of both game and forest products. Harvesting operations, with their roads and skidding trails, make the area more usable in addition to supplying a regular good supply for game. As a result, these lands offer the best hunting.

This brings up the problem of controlling the deer population--one which is causing considerable controversy in Wisconsin and Michigan this year. From the forest management standpoint a certain number of deer are desirable. They eat up much of the undesirable vegetation and give commercial species more chance to grow. But too many deer can destroy the reproduction of all trees. Just how many deer the various forest types will support is a subject for study. Two companies in Wisconsin invite deer hunting on their property and even furnish maps showing where to hunt, but none import wolf packs to keep the herd down as has been implied by some avid Bambi fanatics. Nor does the Michigan Conservation Department have machines for making deer droppings and tracks to show that there is an overpopulation of deer in some areas to support the hunting regulations they recommend. These are fantastic ideas, but they have been expressed and they give some indication of the problem at hand.

Beaver are also a problem in many areas. Their dams destroy many areas of the best timber-growing lands without compensating benefits. Their control warrants study.

Practically all industry-owned forest lands and roads are open to free use by the public. Sometimes logging roads have to be closed for short periods both to protect the roads themselves from damage in extended wet periods and to keep people from getting stuck or from interfering with logging operations. Or roads may be closed to help keep people out of the woods during periods of high fire hazard. This gives some people the impression that logging roads are closed all the time, and I think it would be a good idea to post a notice at the gate to explain why the roads are closed when it is necessary.

So far public use of industry lands has not unduly interfered with the primary function of supplying forest products, but there are always a few people who abuse the privilege of free use. More work has to be done to educate the public as to the abuses to be avoided:

1. Living trees should not be cut or damaged.

2. Fire arms should not be used carelessly. "No Hunting, Men Working" signs should be observed. Signs and buildings should not be used as targets. The forest industries do not like to have even trees used as targets because bullets lodged in the wood can do a lot of damage to saws, chippers, and grinding stones. Requiring people to pass a test before granting hunting licenses would help avoid some misuse of firearms.

3. Camp sites should be cleaned up.

4. The danger of fire is ever present, and people should take every precaution to prevent fires from starting.

Private owners are sometimes reluctant to permit free use of their land because of the danger of losing control of camp sites and roads through adverse possession. The possibility of liability for injuries suffered by people using the land is also a deterrent.

Legislation to protect private owners against adverse possession and liability for accidents might make more small blocks of private land available for public use. This has been done in Minnesota and should be done in Wisconsin and Michigan.

Protecting the scenic value of roadside strips also presents a problem in some areas. Scenic value and good forest management are compatible in stands with trees of mixed species and ages. Cutting only the mature trees is done so that it doesn't impair the looks of the stand. However, these same two objectives are not compatible in even-aged pure stands of spruce or jack pine. Here management calls for clear cutting and planting if the area is not suited to natural reproduction. This spoils the scenery for a few years. However, a very small portion of the land is in this cut-over stage at any one time. Good forestry practices govern the policies of most companies regarding the harvesting of all their lands primarily suited to raising timber crops, but one company protects the aesthetic value by restricting cutting of even pure stands on their lands along public roads and stream banks.

As an example of the application of multiple use on industrial lands, I would like to tell you the story of a tract of land belonging to the Mosinee Paper Company. A 1,300-acre tract in the heart of a Mosinee forest unit was owned some years ago by a corporate rod-and-gun club. Located in as ideal a hunting and fishing area as that part of the state has to offer, the entire tract was closed to the public at large and managed exclusively for its recreational attractions, which included a 40-acre spring-fed lake and part of a fairly productive trout stream. Apparently some members decided they might improve their duck-hunting by planting a bay of the lake with wild rice. Subsequently the rice spread over the whole lake, certainly benefiting the waterfowl population, but ruining the pike and bass fishing. The rice harvest, like the game and fish crop of the tract, was unavailable to the public. Ten years ago, Mosinee acquired the tract from the private owner who had taken over after the rod-and-gun club had become defunct. Since then the entire tract has been open to all forest users. Each fall, an average of 20 Chippewa Indians harvest about 9,000 pounds of rice from this lake with a current unthreshed value of $4,500 but with a retail value of well over $22,000 for the processed product. Berry-pickers and fishermen are numerous during the summer; deer hunters and duck hunters are constantly moving through the tract in the fall seasons; even in winter the area gets frequent visitors from those seeking predators or fur-bearers. "The frosting on the cake" for Mosinee, of course, has been the harvesting of $4,500 worth of pulpwood and post stumpage during the 10 years of its ownership, plus the development of a well-stocked stand of immature timber which is expected to more than repay the original investment during the first rotation.

The fact that industrial forest lands are providing a great deal of this kind of use, all financed through the value of the forest products, is not generally realized. In closing, I'd like to say that I think industrial forest ownership offers the public their best bargain in forest recreation.

PROBLEMS OF WILDLAND RECREATION ON THE URBAN FRINGE

by W. A. McLean[1]

Before setting about a discussion of the problems of wildland recreation on the urban fringe, I find it necessary to establish some terms of reference as a basis for such discussion.

First of all, what do I consider to be wildland? In simplest terms and sufficient for this discussion, I am thinking of lands which have not been subject to development of any kind since man's invasion on nature, and lands which for some time have been free of use by man. In the region from which I come, this includes valley and flood plain lands, considerable acreages of second growth woodlots, abandoned farms, swamps, marshes, and small kettle lakes.

The "urban fringe" is a little harder to pin down because, depending on your professional training, the term will have different meanings. I suppose every collection of buildings from hamlet to metropolis can claim an urban fringe; yet in terms of geographical significance a fringe in which elements of rural and urban life are significant can only exist in areas with a substantial urban population. Further, it must be noted that in large metropolitan regions, urban fringes exist within urban fringes. So nebulous is the whole concept that one is tempted to throw it out and start over again. In this paper, I shall be talking about an area 20 to 40 miles in breadth, encircling a large metropolitan centre in which urban pressures meet with resistance from rural interests, and where the farmer can stick the city slicker for not less than $800 per acre nor more than $4,000 per acre for 30 acres of scenery. I dwell on the concept of the urban fringe because its peculiar nature poses the more serious problems to wildland management.

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[1] Conservation Areas Planner, The Metropolitan Toronto and Region Conservation Authority.

Finally, prior to discussing problems of wildland recreation on the urban fringe, it is necessary to consider what forms of recreation we are talking about. This in itself is a problem. Again, I'm going to take the easy way out and state a case in terms of the Metropolitan Toronto region and the policies of our Conservation Authority, right or wrong, fully realizing that with a different set of policies some of the resultant problems might not exist. Since we deal in the main with lands described as wildlands and our business is conservation, we are concerned only with those forms of recreation which can be performed using the existing natural landscape, improved to provide only the basic necessary facilities. Generally this includes picnicking, swimming, nature hiking, fishing, camping, and in the near future, we hope hunting. Forms of recreation which are a part of the urban landscape and are a part of tailored city parks are not given a place in our wildland areas which we designate Conservation Areas. By this I mean playground areas, formal sports fields, and the like.

The urban fringe is in a constant state of flux, thus the difficulty in giving it a firm definition. As the city encroaches on the rural landscape, the need for wildland recreation increases but the opportunity to provide it decreases. I think this is the case in most urban areas; thinking in terms of wildland recreation is a little behind the need. Undoubtedly you are aware of some notable exceptions, but these are exceptions rather than the rule. The first problem of wildland recreation on the urban fringe then is one of providing, and is social and economic in dimension.

In small centres where the urban fringe is narrow, people usually have close at hand their favorite retreats from day-to-day routine, and are able to spend leisure hours in a rural atmosphere. The urban fringe broadens in proportion to the size of the city, and the private rural retreats available to people are pushed farther away. Within the urban fringe, wildlands are very often still present in river valleys and poor agricultural areas, but are well fenced and posted "Trespassers Prohibited." Unless a public authority undertakes to acquire these lands, the urban dweller is cut off from a rural experience which is his need and right, except on occasions of extended trips to areas distant from the city.

When a public authority undertakes to provide such areas in the urban fringe, it is faced with the problem of economics. In times like our own, land values are inflated, and the effect of prices paid for subdivision land is felt far beyond its specific locale and creates high price tags on land that could never be considered anything but wildland.

This socio-economic or need-price problem places a great deal of responsibility on the public land manager who must answer the need with the few thousands of acres economically feasible on the urban fringe, rather than the many thousands of acres possible in the hinterlands. While I have had experience only on the urban fringe, I expect that our problems differ from hinterland areas in degree rather than kind. When large numbers of people use a relatively small acreage, there is little room for error or misuse.

The use of wildlands for the types of recreation already outlined, I believe, is a sound principle and fills a definite need, but it has pitfalls which must be guarded against. The management of wildlands for recreation is in fact a conservation job. Conservation, being quite distinct from preservation (contrary to Webster's dictionary), implies continuing use by people to advantage. Recreation then must be of a type that will not seriously interfere with the conservation achievement being sought, recognizing, however, that with multiuse a compromise of objectives is usually necessary. There must be a compromise between those who advocate the preservation intact of the natural landscape and those who favor maximum recreational use. This compromise is necessary in order that benefits will accrue to the community in general and in order that the benefits will be continuing. All development and use should be to this end; and here lie the pitfalls.

Whenever natural areas are opened for public use with the intention that they should remain in a natural condition, two things can happen and usually do happen! Misuse and overuse. To a degree, the latter is the fault of the former, and of course the overuse problem is complicated by too many people and too little land.

The problem of overused land as a result of misused land is one that I'm sure is well recognized, but one that there is too little known about. The relationship between a particular site and the use to which it will be put--I'll call it the site-function relationship--is the most important consideration in planning recreation for a wildland area. By the same token, the reaction of a site to particular uses is something we know little about. Is it not reasonable that we should consider recreation a harvest of the land; and, as a farmer selects his crops and management practices according to field capabilities, so the recreational function of a site should be selected according to its capability of performance.

It was with interest that I read in the February-March issue of the New York State Conservation Department's publication, The Conservationist, of a research program aimed in this direction, and in particular "to develop guides and criteria for selecting and developing new recreation areas, and to determine how recreation can be integrated and harmonized with timber, water and wildlife." This undertaking of the United States Forest Service will be a giant step in the right direction, if it can provide more specific information than "Picnicking and allied recreational pursuits are best performed on meadow and semi-wooded land, with a slope of less than 5%. Hilltop sites, light excessively drained and poorly drained soils should be avoided." We need specific information on carrying capacities, management practices, suitable and unsuitable forms of recreation, inherent physical and aesthetic requirements, etc. There is, of course, the regional aspect to this matter, and information gathered in one area would not necessarily be applicable in another. However, criteria and methods of study would be universal.

The deterioration of a wildland recreation area is usually the result of overuse. Overuse can result from a particular site being improperly used (abuse), or simply too many people pressed into too small an area.

The purpose of wildland recreation on the urban fringe is to provide opportunities for outdoor recreation in a natural atmosphere, with a mind to dissolving tensions created in the life of the city down the road. In order that the desired atmosphere be maintained, the pressure of the city into the fringe must be warded off. The wildland areas must be protected by sufficient buffers, which are usually not in the class of wildland but are as important as the wildland areas themselves. Such buffer areas are very often fair game for the sniping of urban uses and must be protected as jealously as the wildland itself. Lands acquired as buffer zones make beautiful high school sites, cheap highway rights-of-way, and so on, but this type of sniping should be resisted.

THE PLACE OF THE UPPER GREAT LAKES AREA IN FUTURE WILDLAND RECREATION

(Abstract of remarks)

by Marion Clawson[1/]

(Mr. Clawson began with remarks on the character of Resources For the Future, Inc. and distributed a list of 13 publications--which appear after this abstract--by or through the Foundation which have dealt with outdoor recreation.)

The basic need is for reasonably accurate, quantitative, analytical studies of the demand for outdoor recreation. We need to measure the effect of money cost, time cost, and travel cost or discomfort upon the numbers of people within a defined population who will visit particular areas. These need to be refined further by measuring the effect of leisure, income, and socio-economic characteristics of the population upon actual visitations, at given costs. We need further to consider the complex interrelations of demand among alternative outdoor recreation areas. The number of visits at any area is in considerable part a function of the supply of alternative areas. In connection with demand, it was emphasized that recreational experiences occur as units and that study cannot be restricted to on-site recreation. Anticipation, travel to site, on-site recreation, travel home, and recollection are the five main portions of an outdoor recreational experience. All deserve consideration and all offer possibilities for enrichment. Too much of the past work has been descriptive only, and has not yielded results which can be used for areas other than the ones studied.

There is also a need for an accurate appraisal of the supply characteristics of various outdoor recreation areas, such as the Upper Great Lakes Area. We should be able to develop indices of the innate attractiveness of areas, in terms of what outdoor recreationists as a whole want, or in terms of what specific segments of the total demand want. We must devise means of measuring the capacity of outdoor recreation areas, without impairing the quality of the area, physically or psychically. One factor is the capacity of the area to resist damage from overuse and to recover when overuse does occur. Another factor is the ability of the area to absorb inputs of capital and management, as a means of increasing capacity. The seasonal usefulness of an area is also a major consideration.

The Upper Great Lakes Area has some large advantages and also some serious disadvantages. On the demand side, it is reasonably close to the great urban complexes from Cleveland through Detroit and Chicago, to Milwaukee. It was pointed out that the Upper Great Lakes Area is one of two fairly accessible scenic areas for most of the Middle West. The second is the Appalachian Mountains, but here heavy use from the eastern population concentrations is encountered. On the supply side, it is a region of fairly high innate attractiveness, with lakes and woods--which seem to be the features most visitors value highest. Its major disadvantage, from an economic viewpoint, is the short season with which it is cursed. Typically, the season is 10 weeks in the summer, with only very light use at other seasons. Many costs are due to annual cost factors--roads, buildings, other improvements, key personnel, etc.

[1/] Director, Land Use and Management Program, Resources For the Future, Inc., Washington, D. C.

Unit costs per recreation output are very high when seasonal use is short. I have the impression that outdoor recreation areas in the Great Lakes region have not been well handled, in at least two respects. First, the area of public recreation and the facilities have lagged seriously, as usage has grown. Second, there has been excessive private appropriation of available lake frontage, until a region uniquely blessed with lakes is in danger of a serious shortage of lake front available to those persons who do not own their own.

Finally, I plea for more research on outdoor recreation--high-level research. There is a great opportunity for such research and no reason on earth for the apparent reluctance to study recreation. There is scope for many types of research; for example, why not establish a number of experimental recreation areas? We have experimental farms, ranges, and forests--why not experimental recreation areas?

Publications by or through Grants of Resources for the Future, dealing with Outdoor Recreation

1. Our National Park Policy, by John Ise (Baltimore: Johns Hopkins Press, 1961. $10.00).

2. Land for the Future, by Marion Clawson, R. Burnell Held and Charles H. Stoddard. (Baltimore: Johns Hopkins Press, 1960. $8.00).

3. "Statistical Data Available for Economic Research on Certain Types of Recreation," by Marion Clawson. Amer. Statis. Assoc. Journ., March 1959.

4. Statistics on Outdoor Recreation, by Marion Clawson. Resources for the Future, 1958. $2.00.

5. The Dynamics of Park Demand, by Marion Clawson. (N.Y.: Regional Plan Assoc., Inc., 1960. $3.00).

6. A User-Resource Recreation Planning Method. Kenneth R. Anderson, Director. (Loomis, Calif.: Natl. Advisory Council on Regional Recreation Planning, 1959. $2.00).

7. "The Crisis in Outdoor Recreation," by Marion Clawson. Reprinted from Amer. Forests, March and April 1959 (R.F F. Reprint No. 13).

8. "Methods of Measuring the Demand for and Value of Outdoor Recreation," by Marion Clawson (R.F.F. Reprint No. 10, 1959).

9. "Our National Parks in the Year 2000," by Marion Clawson. Reprinted from Natl. Parks Mag., July 1959.

10. "Your Investments in Land and Water," by Marion Clawson and Irving K. Fox. Reprinted from Amer. Forests January and February 1961. (RFF Reprint No. 27).

11. "The Role of State Parks in Meeting Recreational Demands of the Future," by Marion Clawson. A paper prepared for the annual meeting of the National Conference on State Parks, September, 1960.

12. "Implications of Recreational Needs for Highway Improvements," by Marion Clawson. A paper prepared for the Dept. Econ., Finance and Admin., Highway Res. Board, January 1961.

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PROSPECTIVE RESEARCH CONTRIBUTIONS OF VARIOUS DISCIPLINES

Some Contributions of Educational Research to Outdoor Recreation

by H. Clifton Hutchins[1]

The best way we know to help people in search of recreation to find some of the values they seek is through nature interpretation. This is an educational task. The only way to bring about the conservation of those natural resources on which we depend for our recreation is through education. There is a vast job of public education to be carried out to awaken the public, residents and nonresidents alike, to the recreational values to be found in this region. And the way to find out how to do these things is through research.

This topic is interpreted to mean those contributions which research in education can make to the advancement of outdoor recreation. In other words: what is there that we have learned about education in general and about human learning in particular that might be carried over and applied to the field of outdoor recreation? From the many possibilities, two principal areas have been selected, one having to do with the learning process and the other with research methodology.

Looking first at the learning process in outdoor recreation, as applied for example in interpretive services, several principles can be pointed out. In mentioning these, we are mindful that our purpose is the influencing of behavior rather than learning *per se*.

First, we can say that no teacher actually teaches; he helps people to learn. He does this by creating an environment favorable to learning through having an appropriate place and materials ready; by arranging experiences beginning at the learner's level of understanding, i.e., with situations already familiar to the learner; by capturing the interest of the individual, possibly with something as simple as an unusual natural object used to get attention; and by his personal example as an individual, as will be reflected in his words, inflections, actions, and attitudes. This importance of learnings other than knowledge cannot be overemphasized. Changes occur in individual behavior as a result of these many influences, not the least of which is the individual in the position of the teacher.

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We can say that learning is a function of readiness to learn which, in turn, depends on the maturity of the individual or the degree to which he has developed the background and the physical capacity to absorb different kinds of information, skills, and attitudes. Readiness varies for different kinds of learning: A child can learn the name of a tree, but would find it difficult to grasp the chemical processes involved in photosynthesis through which the tree maintains itself. An adult can be expected not only to acquire knowledge but to make use of such knowledge in new relationships; in short, to think. Learning depends on the growth process, and pressuring the learner to absorb something for which he is not ready is likely to be useless. On the other hand, a person will learn much more when he has the readiness for that kind of learning. The real difficulty lies in the fact that we know so little about when an individual is ready for particular kinds of learning.

It has been found that we can intensify learning in considerable degree by using more than one of the senses. If we can offer a direct experience involving the senses of touch, smell, sight, and hearing, of a small animal, for example, the learner is far more likely to retain the impressions gained than he would from merely seeing a picture of such an animal. Experiments with visual aids to learning have shown 20 percent greater learning of facts and as much as 38 percent greater retention of facts over a period of time, when a multi-sensory approach is used.

There is also the matter of motivation which helps with understanding why people behave as they do. We know that most children are genuinely eager to learn in the outdoors, partly perhaps because of the multisensory stimulation but even more importantly because of the sense of adventure fostered by the new and friendly, even the sometimes fearsome, environment. Other human motivations which are widely accepted as bases of behavior, even though expressed in different ways, are the desire to belong, i.e. to enjoy the approval of one's peers; the desire to achieve or, in other words, to have at least 51 percent of success, whatever is undertaken; the desire to exercise or make use of one's capacities, be they physical, intellectual, or spiritual; and the desire, at all ages, to do some things purely and simply for the fun of doing.

Some understanding of these motivations helps to explain human behavior and provides a tool for use in the educational process. People get satisfaction from doing the things that gratify these motives; trying something that is new and perhaps a bit dangerous; having clothes or other possessions that excite envy; completing an unspectacular, tedious job; tackling a difficult problem that taxes one's capacities; playing on the floor with children. These personally satisfying experiences often lead to re-creation in the truest sense of that term.

There are many other facts of human learning which can be used to advantage; the differences among people in their capabilities and their reactions to stimulation; the different span of attention found at different age levels; the carry-over of interest to another time when the experience is ended just after the high point is past. In part, then, outdoor recreation is a function of learning and requires much of the same knowledge and understanding that we expect of a teacher.

Another quite different type of contribution to outdoor recreation may be the methodology of educational research, most of which is, of course, not unique to education. In suggesting these kinds of research design, I do it with full cognizance that psychological research, sociological research, and some aspects of economic research use these same principles. Here are five types of research design which can be used to advantage in outdoor recreation.

First, there is the normative-survey approach involving the description of a population sample in terms of averages and measures of variability. This can be illustrated by a descriptive study of the numbers, kind, and personal characteristics of state park visitors in which the many interrelationships of the several variables are explored as well as the averages and ranges. Often the data are obtained by interview and sometimes, unfortunately, by questionnaire.

Second, there is historical research involving the compilation of historical data on human or natural phenomena as, for example, the origins of parks, or a history of the uses of leisure, or the natural history of an area. Here there is a careful assembling of source materials, a process that calls for infinite, scholarly care.

Third, there is the comparative approach involving the determination of changes in the behavior of one or more population samples through successive measurements of the same variables over an extended period of time. An example of this is the longitudinal study such as might be made of the effects of continuous, heavy foot traffic on soil impaction or on plant life in a circumscribed section of a park, over successive years.

Fourth, there is the experimental approach in which, by one means or another, there is a comparison of the behavior of two presumably equated population samples, both of which are performing tasks that are identical except for a single variable. To illustrate this we might, for example, measure the effect of different admission fees on attendance at two highly comparable park areas over a period of time or on a series of weekends.

Finally, there is the diagnostic approach in which there is an analysis of the interrelationships among several variables, each measured on a number of different individuals or occasions as, for example, a study of the relative significance of various factors influencing growth of a community or region. The technique of factor analysis can be used here as well as analysis of co-variance. These help to identify the factors of greatest significance.

In concluding these remarks I want to raise some questions which can possibly be answered by some further research. Certainly we need the answers by whatever means they may be found.

> Why do people seek water at their recreation places or recreation places where there is water? Is there some climatological or physiological or psychological element, or combination of these, that we should know in planning for the recreations of people?
>
> Can outdoor recreation experience awaken in each of us an understanding of our dependence upon the soil, which understanding, in the view of many, is vital to our survival as a people?
>
> How can outdoor recreation awaken a sense of need for the conservation of natural resources in order that we as a people may preserve some part of our native landscape, our heritage if you will, for the future?

What happens to an individual who is re-created by contemplating the vastness and rugged beauty of a jumbled mountain range and thus finds spiritual peace in the wilderness?

There are hypotheses as to the answers for each of these questions, but they are merely hypotheses which need to be tested. There is much to be done!

Forest Recreation Research

by Harry W. Camp[1]

From the program title for this group of papers, "Prospective Research Contributions of Various Disciplines," one might get the impression that outdoor recreation problems fit neatly into a series of scientific pockets. My experience thus far in forest recreation research is just the opposite. I have the feeling that there are few fields of research that have to call on more disciplines to solve a single problem than does recreation research.

In recent years "outdoor recreation" has become a very popular topic. A great deal has been written, and much more has been said, about the sudden onslaught of out-of-door recreationists. It isn't too difficult to detect a slight tone of alarm in these writings and sayings. Some of this is intentional, as arousing alarm is a means of focusing attention on the demands for outdoor recreation and on the need for meeting these demands. Some develops incidentally from the popular use of descriptive phrases such as "population explosion" and "urban sprawl," and some from the plain fact that a very real problem does exist. Probably an even more fundamental reason for concern is the dearth of basic information so necessary to the administrator for adequate planning, developing, and managing the recreation resource. In some instances we are truly shooting in the dark. Herein lies the need and justification for research in the field of forest recreation. The land manager needs sound facts, guidelines, and criteria on which he can base his recreation policy decisions. Recreation developments cost money, and those passing out the funds want facts rather than words to support requests for financing.

National forest administrators of recreation have always drawn heavily upon investigative findings in such fields as ecology, silviculture, watershed and wildlife management, soils, and economics. Research aimed specifically at management of forest recreation has been noticeably absent. In the late 20's and early 30's Dr. E. P. Meinecke, a well known forest pathologist, devoted considerable time to observing the effects of recreational use on the natural vegetation. A number of publications resulted from his work. But probably the first formal and official recognition of the need for research in this field was in 1939 by Robert Marshall, then Chief of the Forest Service's Division of Recreation and Lands. Marshall referred to problems on forest recreation as, "they are problems of instant importance, and the happiness of many millions of people is impaired because we are exerting not one iota of effort to their solution."

He referred specifically to these problems:

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[1] Chief, Forest Recreation Research, Forest Service, U.S. Department of Agriculture.

"1. Methods of sampling recreation visitors to get a more accurate picture of their numbers and their needs.
2. The effect of recreation visitors on local economics.
3. The effect of road construction on the adjacent ecology.
4. Factors involved in the preservation of roadside strips.
5. Overuse of recreation areas."

Of these problems the last, overuse of recreation areas, was considered to be in most immediate need of study. At the urging of Marshall, the late Dr. Lincoln Ellison was assigned to size up the problems of overuse around campgrounds, to get some indication of damage to plant cover, and to consider ways and means for study of the problem. Ellison made an observational study of Forest Service campgrounds in Utah and proposed a recreation research program for the Intermountain area. Because of world events taking place about that time the program proposed never got underway.

In the years following World War II, recreationists returned to the National Forests in throngs, and the build-up in use, referred to earlier, began to take shape. With this accelerating use, all of the old and many new problems cropped up. In 1954 the Department of Agriculture Forestry Research Advisory Committee urged the Forest Service to intensify research underway, and to undertake comprehensive studies of the many problems of forest-type recreation, planning, and administration. Following this recommendation, in 1956 Dean S. T. Dana was employed by the Forest Service to make a review and analysis of the major recreation problems needing study. This resulted in his 1957 "Problem Analysis--Research in Forest Recreation" which served as a guide in setting up the Forest Service Recreation Research program.

This report is a fine presentation, on a general basis, of recreation problems needing study. In brief this analysis recognized 17 major problems identified with one of three groups:

1. Supply and demand.
2. Costs, returns, and values.
3. Management and administration.

In developing our research program we have recognized thus far two broad work projects for conducting approved studies:

1. Management and improvement of recreation resources on forest lands and related rangelands. (Biological and physical factors).

2. Evaluation of factors pertinent to planning and administering forest recreation resources. (Recreational-use factors).

The first includes research on such things as determining: methods for management, improvement, and protection of recreation resources; the carrying capacity of different kinds of forest and related range lands (including wilderness areas) for various kinds and intensities of recreational use; effects of various types of recreation use upon grazing, wildlife, watershed values, and timber production, and the reciprocal effects of these other uses on recreation resources; ways of manipulating recreational use and vegetation to maintain or improve recreation resources; quality, standards, and designs for facilities; and controls and devices needed to insure the health and safety of forest recreationists.

Research in the second category is directed so as to develop and improve techniques of measuring and classifying forest recreation use, and of inventorying forest recreation resources: investigate factors influencing incentives, desires, and choice of recreation activity; improve procedures of making projections of future recreation use; appraise prospective balances between available forest recreation resources and recreational use demands; and develop guides and procedures for measuring personal and social values associated with recreational use of forest land.

Nationally, we have organized our research on a regional or area basis according to major problems needing attention. We have found that, generally, similar problems exist in each regional area. The degree of urgency, however, does vary by region. The answers developed for problems in one region can, in many cases, serve the needs of another region. But there will be need for some testing in each region because of the variations in people, climate, cover, soils, and other factors affecting forest recreation.

The recommendation given top priority by the Forest Service was that an inventory be made of the recreation resource on the National Forests. Such an inventory had been under consideration for some time, and planning in detail got underway in July of 1958. The inventory is being carried out by project personnel drawn largely from administrative people who have had considerable experience with forest recreation. People trained in research were called upon to provide estimates of future recreation use to be used as goals for the survey, to assist in establishing criteria for judging suitability of forest areas for various recreational uses, and to develop standards for rating quality of potential recreation areas.

From this experience a number of general problems were encountered which need study to provide the planner and administrator with the information they must have to plan and make policy decisions. One problem involves the techniques of making projections of recreation use. Considerable time was devoted to studying various methods that had been suggested, and to trying out new ideas. A number of very capable economists have tried their hand at developing methods for projecting recreational use, and almost all of them have concluded that future use is determined by changes taking place in personal income, population, leisure time, and mobility. Other factors such as desires or attitudes of the recreationists, promotion programs, and supply of suitable area also affect future use. More study is needed to measure the effect of other factors as well as to learn how to project their effect into the future. We must also keep these projections up to date.

Another problem of immediate concern is one of obtaining adequate estimates of recreational use. Generally, the estimates we now have are inadequate. Total figures may be within reasonable limits, but the breakdown by kinds of uses is very erratic.

Still another problem arose in establishing factors for converting projected use to area needed. We need to know a lot more about the recreational carrying capacity of forest lands.

These are general problems having many parts requiring investigation. Answers should be valuable to all who are involved in outdoor recreation. There are many other problems which are peculiar to specific areas and must be approached on a local basis.

A short time ago I mentioned that the Forest Service had organized its recreation research on a regional or area basis, and into two general fields: biological and physical factors, and recreational use factors. I would like to describe a little more fully where our program stands today and some of our plans for the future.

Excepting the work done by Meineke and Ellison, and the research done in other fields of forestry which has been very helpful to the forest recreation administrator, little aimed specifically at solving forest recreation problems had been done prior to 1958. In August 1958 the first forest research center having recreation research as a major theme of its program was established at Warren, Pa. This unit is concentrating its efforts on problems bearing on planning, development, and management of recreation areas, and we have a variety of studies underway. To name a few:

1. A study of nine highly-developed recreation areas in the Northeast to identify recurring problems and indicate possible research approaches for their solution.
2. Effects of fertilizers on areas worn by recreational use.
3. Effects of heavy use on the soils of recreation areas.
4. Study of the seasonal and long-term changes in vegetation subject to heavy recreational use.
5. Development of a method for studying the pattern and intensity of use on a recreation area as affected by weather, location and arrangement of facilities, time of day, and age and sex of users.
6. Study of techniques for checking visitor motivation and attitudes toward forest recreation.

Under the direction of the Pacific Southwest Forest Experiment Station in Berkeley, Calif., we are working to develop efficient sampling techniques and procedures for measuring annual use of developed camp and picnic areas on the National Forests of California. We are also studying the effects of concentrated use on the ecology of developed areas such as campgrounds and picnic areas.

In the Lake States area, we are presently concentrating on determining the attitudes, desires, and needs of recreationists. The Boundary Waters Canoe area is the locale for this study, which is a continuation on a larger scale of the study conducted by the University of Minnesota.

In the Pacific Northwest, problems concerned with the management and use of wilderness areas are being studied. A very interesting study underway is designed to test the effectiveness of unmanned registration stations in wilderness-type areas. There are two phases to the study: one is designed to determine which of six varieties of unmanned registration stations is best for obtaining specific types of information. The other phase is an evaluation of procedures utilizing registration information to obtain use data and unbiased samples of names and addresses of wilderness users.

In the Southeastern area, we are studying the impact of mass recreation on developed sites. This involves case history studies of about 75 camping and picnic areas. Another study is concerned with determining the nature, magnitude, and trend of hunting recreation in a newly created forest-wildlife management area. A third study is designed to develop sampling models and procedures to measure and predict the nature and amount of dispersed recreation.

In forest recreation research we are most interested in finding out how we can provide the most recreation per unit of area without destroying the resource or the recreation experience that is intended.

Within the next 2 years we hope to have work going at each of our regional experiment stations. Probably our biggest hurdle is recruiting research project leaders. Obviously, we will not find individuals having all the talents of a sociologist, psychologist, ecologist, biologist, landscape architect, forester, and economist. But these are some of the sciences involved in the recreation field. Recreation research is new, and we need project leaders with a keen interest in forest recreation and with a great deal of imagination.

Geographic Research in Outdoor Recreation: A Case Study of Recreational Usage of the Whitewater Valley, Minnesota

by Hildegard Binder Johnson[1]

Background: The role of relatively constant physical geography and of persistent historical forces for the establishment of the recreational area.

The recreational area under discussion consists of a State Park of 688 acres, established in 1919, and a State Game Refuge, for which 23,848 acres had been acquired by January 1, 1960. Roundly 14,640 acres can be additionally acquired until 1968 under the present agreement.

The State Park is located in the scenic spot where the South and Middle Forks of the Whitewater River join and form an incised meander; the establishment of the Park was promoted by citizens from St. Charles, that is, a local group, during World War I. A tract of 2 to 3 thousand acres in the so-called Elba Valley, "one of the most beautiful and picturesque in the State with easy access to motorists" was deemed "ideal for camping, picnicking and recreation," according to a booklet with photographs of the Whitewater Valley, titled "Paradise of Minnesota," published in 1917 by a resident of St. Charles and sold for $1.50 to create "a nice initial park fund." By 1923, 668 1/3 acres had been acquired with appropriations from the State, to which only 20 acres have been added until 1961.

The Game Refuge is located along the North and South Forks and the main valley of the Whitewater River. (See map--Whitewater Game Refuge). It is not a compact area and separate from the State Park. The Game Refuge has beautiful varied scenery due to the strong relative relief and is subject to physical forces, such as storms with resulting flash floods; erosion and sedimentation; two so-called bottlenecks, i.e., bluffs facing each other across the valley, suddenly narrowing it to about half a mile; and the confluence of the three main forks, which drain about 250 square miles, in less than 4 miles in the main valley. These physical forces are dynamic and slowly change the phsiography of the landscape. But for research in planning for recreational land usage they can be assumed to be constant factors.

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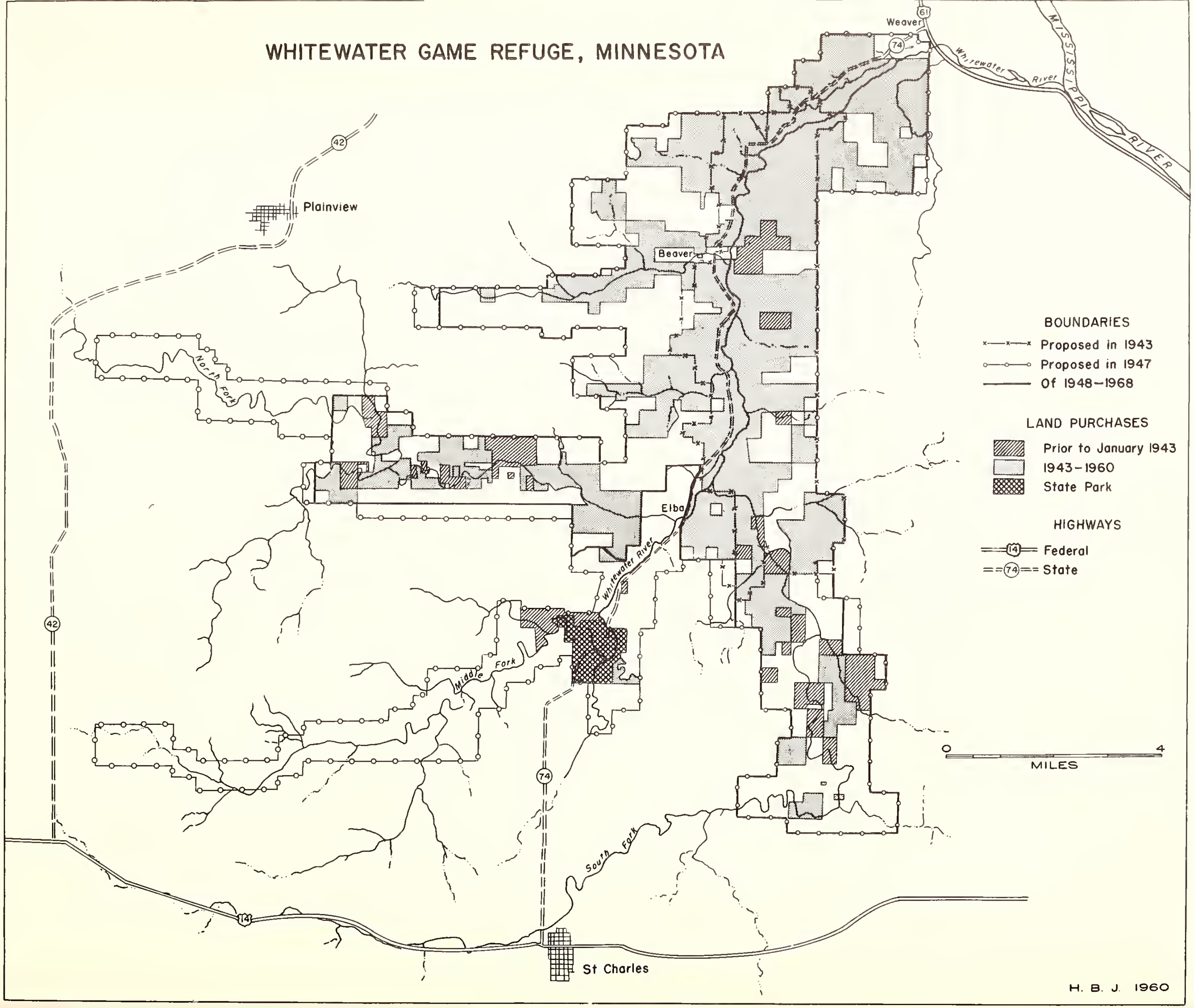
WHITEWATER GAME REFUGE, MINNESOTA



The Game Refuge was established in 1931 after members of the Izaak Walton League from Winona, St. Charles, Plainview, and Rochester, again a local group, petitioned the Conservation Commission of Minnesota to "preserve this area of inestimable value from the scenic and recreational standpoint, it being one of the last outstanding areas having a considerable wilderness of virgin hardwood which if now acquired and properly conserved will furnish habitat for wildlife." The first purchase in 1932 was Crystal Trout Springs, a farm, which became the site of the State rearing and stocking ponds for trout. The persistence of this recreational attraction is noteworthy: Crystal Springs was reported around 1900 to be "the spot to which city people flock for a catch of trout," after it had been leased earlier "with the right to allow patrons to take fish from the pond all summer."

The location of the tracts, purchased by the State, was scattered. By 1936 the limits of the present refuge were reached along the North and South Fork in opposite directions, closer to St. Charles and Plainview than to Elba, a small town in the heart of the valley. Availability of land for purchase played a role in the design of the Game Refuge boundaries which is not entirely accidental since some rough land never was agriculturally usable and some bottomland became unusable for agriculture through heavy sedimentation.

The rapidly accelerating deterioration of agriculture and the Wildlife Restoration Bill in 1937 combined to speed land acquisition between 1947 and 1950, when a number of large farms were bought. Then the pattern changed; in 1951, 9 out of 13 documented purchases were for 40 acres or less. To acquire small woodlots of 5 to 10 acres each requires more time for proportionally less areal gain than it takes to buy large farms, particularly when preparatory fieldwork and contact preceded the actual transfer from private to public ownership. The easiest transactions are naturally processed first.

Every land acquisition program, particularly when it extends over more than three decades, generates new forces. In the case of the Whitewater, the increased visible wildlife; attractive scenery; the trout stocking ponds at Crystal Springs and trout streams; the availability of a camping ground, cabins, barracks and a golf course in the State Park; courteous service by field personnel; interest of schools and educators; and most of all the location of the Refuge in the most densely populated part of the State combined to make the Whitewater Valley Minnesota's outdoor classroom of conservation and an increasingly frequented family recreation spot. The restoration of upland game, fur-bearing animals, and fishing streams was the original purpose of the Game Refuge. This originally proposed recreational usage has been eclipsed by forces emanating from financial and technical aspects of management, the purchasing program itself, and most of all, by accessibility and location. The Whitewater area proved very accessible from the time of earliest settlement in the 1850's. The influence of accessibility and location on recreational land usage is the particular subject of this case study.

Location and Accessibility: Available and desired data.

The Refuge, which extends ribbon-like in three opposite directions and borders everywhere intensively cropped agricultural land, can be entered and traversed via altogether 13 roads, all of them a carry-over from the agricultural era. The small trading town of Elba is in the center and derived some income from road maintenance and work in the Refuge during the period when loss of trade resulted from the sale of farms around the town in the valley. By 1961, Elba derived the usual income from the farms on the upland but also additional revenue from tourists during the summer and hunting and fishing seasons. It is no longer a deteriorating town in an agriculturally depleted valley but increasingly attractive as a stopping point, with a new restaurant opened in 1960.

State Highway No. 74 traverses the State Park and the largest contiguous part of the Refuge. It is as established and persistent, in spite of frequent flooding, as are the two transcontinental highways which are connected by No. 74. Highway No. 61 along the Mississippi, an old territorial road, will be connected with the Canadian Highway to Alaska; Highway No. 14, which follows closely the old territorial road from Winona and La Crescent to Rochester and the Minnesota River Bend, makes the Whitewater Valley accessible from the south. The Interstate Highway will parallel this route, which proved persistent through more than 100 years, and will run by a small place, characteristically named Ridgeway, southeast of St. Charles. This town calls itself the Gateway to the Whitewater, and Highway No. 74, which runs through St. Charles and connects with a major highway, No. 52, to the south, will have a first class outlet from the Interstate Highway.

The location of the Whitewater Valley close to the Wisconsin and Iowa border makes an assessment of its recreational usage on the basis of state counts unpromising. The conservation departments, interested in the degree and type of usage, furnish summed information for camper days and visitors totalled by states, but they cannot preserve in their totals information with respect to places, regions, and settlements of origin nor do they have information as to the routes travelled by visitors. These are of particular interest to the geographer. Information lost through summation is lost irretrievably.

In order to satisfy a geographer's interest, the home addresses of 3,247 golfers and 2,704 campers in 1959 were identified from individual registration tickets and mapped. An exact count of the usage of the golf course under family and season tickets was not possible. A count and identification of origin of the persons crowding around 465 picnic tables and on the small swimming beach on long weekends or hot summer afternoons was also impossible. This could likely be assessed by random sample checks of number of passengers per parked car and of the number of regular beach users among the crowds in the trailer camp and the overnight guests in the cabins. No information can be obtained from individual registration tickets for the important question of the routes taken by the parties in the trailer camp and of their final destination. For an answer to these questions, a questionnaire was distributed between August 7 and 29, 1959. Of the 257 distributed questionnaires, 183 were answered. Thus the results do not have the validity of a rigorously conducted investigation, based on random sampling. But they reveal significant facts as to the origin and destination of campers and make it possible to type routes. These, again, reveal reasons for the selection of the Whitewater Valley as a recreational area and permit evaluations as to the type of visitors and their way of using facilities.

Findings.

The State Park has a local, regional, and national clientele.

The swimming beach, golf course, and the picnic grounds serve nearby towns daily through the summer. Those who use the golf course and come from a distance of more than 50 miles are not regular clients but stay as tourists in the State Park. Local clients represent 82 percent of the purchasers of daily tickets, but season tickets, assuming 25 usages per ticket per season, raise local usage to at least 88 percent of the total. Of 68 family tickets, 38 were held by residents of St. Charles. Rochester (population 40,663 in 1960 and St. Charles (population 1,882 in 1960) account for almost half of the golfers. St. Charles and Winona, with three colleges, and Rochester, with the Mayo Clinic, St. Mary's hospital, and a new IBM plant employing 2,200 people, use the Whitewater for family picnics, swimming, and golfing and represent the main source of the local clientele.

The regional clientele consists mainly of campers who make the Whitewater their destination over the three long weekend holidays and for vacations, at times up to the 3-week limit. They come largely from the metropolitan areas of Minnesota, Wisconsin, and Illinois and from Iowa's medium-sized towns. A few parties giving Canada, England, and France as home are not mapped. Eleven places among the 2,704 cards could not be located. Ambiguities, double entries, and omissions were corrected through cross reference and judgment. Of 1,592 parties from Minnesota, 840 were from the Twin City Metropolitan area. Campers from outstate increased from roundly 40 to 48 percent of all permits, i.e., to 1,112 permits between 1958 and 1959. The regional distribution is shown on a map (Geographic Origin of Campers), where places of origin are presented by proportionate circles in the location of the home address. Home addresses are totaled by counties for Minnesota on account of the large clientele from southeastern Minnesota counties.

The Whitewater Valley is a stopover point for transcontinental vacation travel in July and August. It is conveniently located at one day's travel distance from the most frequented south-central Wisconsin State Parks and from State Parks in the eastern Dakotas. This stop-over region, a north-south axis, is again one day's travel distance from the South Dakota Badlands and the Black Hills, with Yellowstone and Glacier National Parks as attractions further to the west. Thus the small park has a national clientele, for which the questionnaires, asking for last overnight stop, route travelled and destination, that is, the point farthest away from home, proved informative. The 183 questionnaires can be divided into parties with destination Whitewater (127) and stopover visitors (55); into 81 from out-of-state and 102 from Minnesota. It cannot be assumed that in-state licenses mean the State Park is the destination nor that out-of-state licenses mean stopover campers.

The 55 stopover camping parties, represented on map (Stop-over Camping) fall into five groups.[2/]

1) Fifteen east-west travelling parties from Ohio, Illinois, Maryland, Massachusetts, Indiana, Pennsylvania, and Wisconsin were returning from Yellowstone Park, the Black Hills, Glacier National Park, the Grand Canyon, Colorado, and Washington State or had them for their destination.

2) Of 18 parties, who stopped over on a trip from south to north, 12 were from Iowa, 2 each from Minnesota and Illinois, and 1 each from Kentucky and Arizona. Itasca State Park, the Interstate Park

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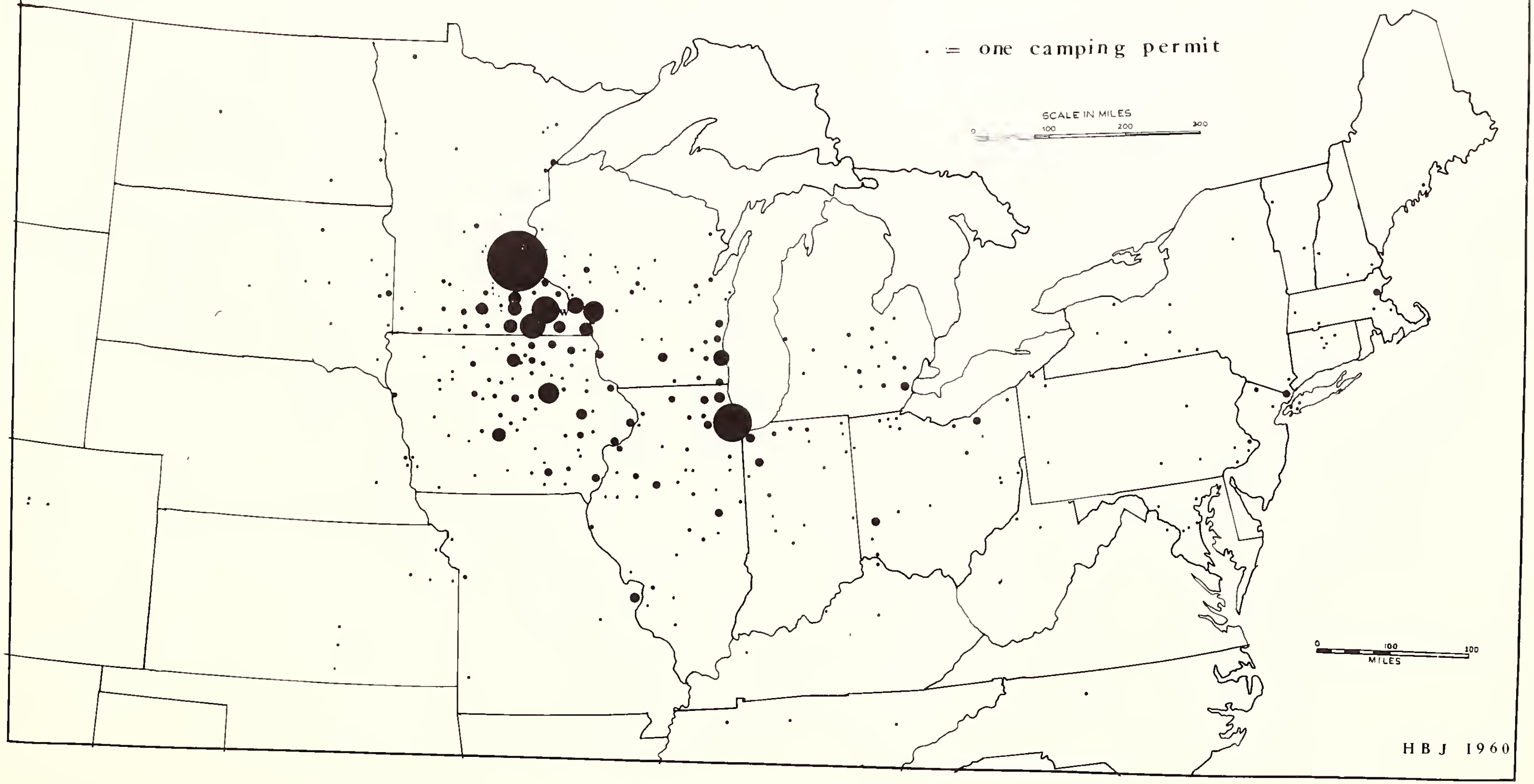
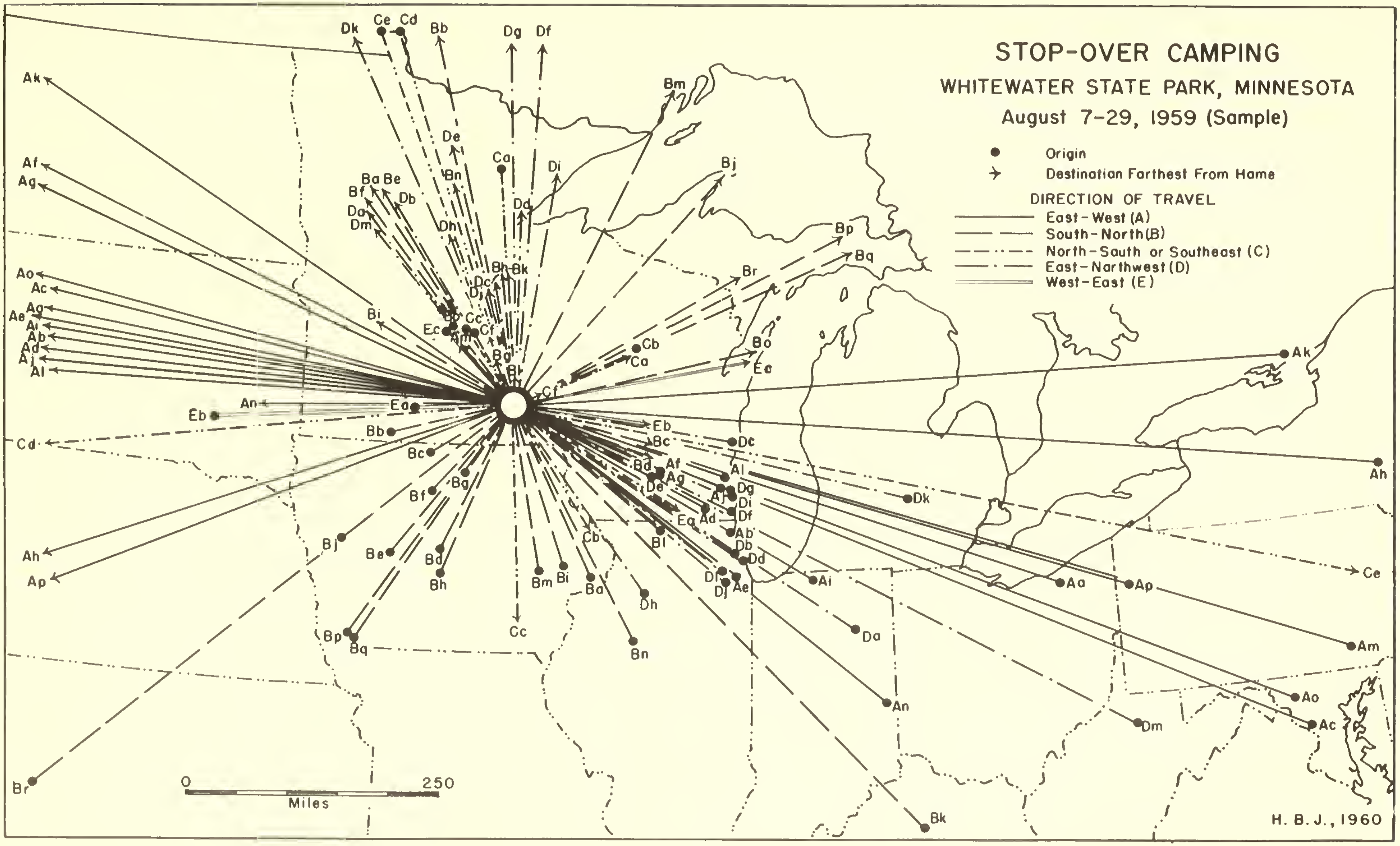
2/ The author is indebted to Professor James Barnes who kindly assisted in the organization of the map.

GEOGRAPHIC ORIGIN OF CAMPERS - WHITEWATER STATE PARK

APRIL 4 - OCTOBER 10, 1959





on the St. Croix, Devils Lake State Park in Wisconsin, and Canada were or had been destinations.

3) South or southeastbound parties from the north included three camping parties from Minnesota on their way to Wisconsin.
4) East to northwest travelling campers came from Indiana, Illinois, Wisconsin, Michigan, and West Virginia on their way to Itasca, Duluth, and Ontario.
5) Three parties from South Dakota and Minnesota were on their way to vacations in Wisconsin and Michigan.

There is little travel from west to east. An in-state license may mean through-travel to an out-state destination. The majority of state park campers travel from state park to state park, a fact that should induce cooperative development of recreational areas by neighboring states. State boundaries are insignificant when "convenient distance" is the overriding consideration. Of 183 camping parties, 79 wrote widely diverse comments under the line which asked "why" they had stopped in the Whitewater State Park. Distance, worded variously, was the reason of 42 parties, that is, 53 percent of those answering. Three wanted to be close to the Mayo Clinic at Rochester. One of the unsolicited comments by a party from West Allis, Wis., is interesting: "Because Highway 14 is used as a route to the Black Hills we suggest more camps between here and Lake Shetek." Among the 117 campers who made the Whitewater their destination, 39 came from the Twin City metropolitan area, 39 from Minnesota towns less than 100 miles away, 15 from Iowa, 10 from Wisconsin with La Crosse accounting for 5 of them, 4 from Illinois, and 1 from South Dakota. "One day's travel from home", given from as far away as a northwestern suburb of Chicago, is the overriding reason given by campers in the Whitewater area.

Answers to the question of the road by which the Whitewater State Park was reached were as follows: Of 183 parties, 103 came via Highway No. 14, 46 via Highway No. 61, 18 via highways No. 74 and No. 52; 7 gave neighboring county roads as routes of entrance, and 9 did not declare the route which they had travelled. St. Charles on Highway 14 is indeed a "gateway" to this recreational area.

The State Park of 688 acres is not sufficient to accommodate campers, hikers, and visitors staying in the cabins. The nearby Refuge is used for overflow tenting, for hiking, fishing, riding, bird watching, nature hikes, and last but not least, for historical tours. The last now includes visits to three cemeteries in picturesque locations, another carryover from the agricultural era. Their maintenance became the duty of the conservation department personnel by an Act of the Minnesota Legislature in April 1959. Former residents of the valley who sold their farms to the State live close by in the small towns and insisted on the upkeep of the burial grounds. Informally obtained information from roundly 150 participants in a hike to an old abandoned house in a side valley revealed extraordinary interest in the history of the region, an interest which has added another purpose to the multiple purpose usage of the Whitewater Valley, where wildlife management, some remaining agriculture, trading, fishing, trapping, research, lumbering and recreational land usage exist simultaneously in an intricate and interrelated process.

Recommendations.

1. Investigations as to the character and attraction of existing or proposed recreational areas must include the historical geography of the region, a neglected aspect in qualitative research.
2. Accessibility and distance are overriding reasons for usage. This necessitates planning in which the location of recreational areas and the development of arteries of traffic are coordinated. Recommendations as to the location of recreational areas with regard to population centers and transportation lanes were already contained in the "Report on National Planning and Public Works in Relation to Natural Resources" in 1934. Sample checks by highway departments as to the usage of roads for recreational travel are desirable.
3. Studies of direction and rate of growth of metropolitan areas will have to be integrated with recreational land use planning. For instance, John Borchert's study of the predictability of the growth of the Twin Cities until 1980 (Geographical Review, January 1961, pp. 47-70) can be used together with the addresses of users from the metropolitan area of the Twin Cities to evaluate what "one day's travel from home" means in different parts of an urban area which expands at different rates in several directions.
4. There is an urgent need to identify origin of visitors by actual location rather than by states. Here, as in other fields, research which is regionally delimited and not defined by state boundaries is needed. There is value in research that is based on documentary data and attentive to individual cases, be it modest in scope.
5. Behavioral and geographic studies can benefit from each other. An example is the origin of campers in the Whitewater State Park. School systems and socio-economic characteristics vary in towns and cities of different sizes. These, in turn, reflect on the public's behavior and recreational usages. An experienced leisure-time leader commented in August 1959 to the investigator, that the comparatively disciplined and peaceful atmosphere in the overcrowded camping ground in the Whitewater State Park could likely be a result, at least in part, of good schools in medium-sized towns.

Bibliographical Notes.

The author expresses her indebtedness to U. W. Hella, Director of State Parks, Department of Conservation, Minnesota, for permission to use original contemporary data, and to Mr. Wayne Kontola, Park Supervisor, for much practical assistance.

This is an abbreviated version of an intensive study of recreational geography of the Whitewater Valley; compilations of the usage of the cabins and detailed description of the actual usage of the Whitewater area had to be omitted.

For a general historical background, the usual county histories are somewhat informative: H. H. Hill and Company, "History of Winona County," Chicago, 1883; Franklin Curtiss Wedge, "The History of Winona County," 2 vols., Chicago, 1913. Investigations of earliest occupance and history of agriculture in the valley were found very helpful for an assessment of potential recreational usage: see Hildegard Binder Johnson, "Rational and Ecological

Aspects of the Quarter Section," Geographical Review, July, 1957, pages 330-348; and "King Wheat in Southeastern Minnesota," Annals of the Association of American Geographers, December 1957, pages 350-352.

The Whitewater Valley has been widely publicized in trade journals and Twin City papers, but particularly through articles in The Conservation Volunteer, official bulletin of the Minnesota Department of Conservation, January/February, 1949, May/June 1952, November/December, 1955, January/February, 1956, March/April, 1956, May/June, 1956.

Research Possibilities in Outdoor Recreation for Political Science

by Julius F. Wolff, Jr.[1/]

Just as the rest of the social sciences can make appropriate contributions to the furtherance of outdoor recreation, political science likewise can furnish pertinent information. For purposes of specialized study, the discipline of political science is subdivided into a number of component fields, American government, public administration, comparative government, law, political philosophy, international relations, and political dynamics (including parties, pressure groups, and public opinion analysis). Each of these offers potential increments to the fund of knowledge concerning outdoor recreation.

In the realm of American government a wealth of research opportunities might be available. One overall project might ascertain how the American people can best use each level of government, national, state, or local, in the furtherance of outdoor recreational opportunities. What can each level provide? Which is best fitted to handle specific recreational undertakings? What are advantages and disadvantages of each approach? How responsive is each level to the recreational needs of its respective constituents? A second investigation of research possibilities in the American government field might involve a historical analysis of recreational efforts. In cooperation with historians, students of American government might trace the story of American recreational undertakings, by national, state, and local government. How were these accomplishments achieved? What executive or legislative techniques were used? Who were the supporters? What types of recreational services have been performed by each governmental echelon? Have these met needs?

The history of governmental recreational undertakings might be made more meaningful by public administration specialists who explore the techniques of government in promoting public recreation. What agencies have been created to furnish recreational services to the American people? How is each organized, structured, controlled? What types of operations are conducted? Who handles these? Are sound administrative processes applied? What are these? Then too, the public administration student can study financial support, personnel programs, can apply standards of efficiency. He can compare recreational transactions with other activities of government,

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inform us to what extent the public recreation dollars are producing sound returns. And he can recommend alterations of structure, procedure, or personnel practice in the interests of improving the services needed by the American people.

The field of comparative government may add its bit. How do other nations of the world handle their public recreational problems? What techniques do they employ? How successful are their efforts? What popular recreational needs are met, and at what cost? How do their recreational promotional actions compare with ours? How have these been accomplished politically? What recreational practices of foreign governments can be successfully adapted to American recreation.

To this contribution of the research man in comparative government, the technician in international relations might offer additions. In what instances has international cooperation assisted outdoor recreation? What international projects have been accomplished to date? What problems exist which seem soluble only by international cooperation? Specific studies here might include the story of migratory bird conservation in North America and in Europe, or the preservation of certain fishing recreation in North America. The Quetico-Superior project in Minnesota and Ontario might be another.

The field of law offers a good deal of research potential in the realm of recreation. What legal powers of government are involved in the promotion of outdoor recreation? By what echelon is each set used? Which power is best suited to given circumstances? What is the history of adjudication where recreational undertakings have been challenged in the courts? Again, there is ample opportunity to explore the legal foundations of numerous recreational projects. For instance, of what significance is the treaty power of the national government in waterfowl and fishery promotion? Can the Fourteenth Amendment be used effectively by noncomformists to halt expansion of public recreational areas? What have the courts ruled concerning proprietary and police power functions in recreational developments? What are legal rights of land owners and recreationists in pursuit of special recreational pastimes? Can a recreation-minded public legally coerce a private land owner in seeking to encourage a pattern of land use which tolerates an environment favorable to recreation? Or should the recreational public attempt to harmonize the law of the states on water use, in game conservation? One could continue almost indefinitely in offering suggestions of study in this field.

American political philosophy can present to recreationists some explanation of why they think as they do concerning outdoor recreation. One can peruse the tracts of American political philosophers, seeking the intellectual ingredients of America's back-to-nature movement or cult of the wilderness. Or one can trace among little-known colonial political writers the beginnings of our outdoor equalitarianism. Sometimes, minute examination of a pioneer nature writer, such as Henry David Thoreau, will give us answers to contemporary recreational attitudes. In the commentaries of the famed French traveler, De Tocqueville, we might find evidence, a century old, of an evolution in American thinking on outdoor recreation. The political theorist can explain how public recreation was allotted a low priority among the laissez-faire individualists who deprecated extensive governmental activity in any area, recreation included. At the same time, he can recognize the inclusion of public recreational opportunities in the overall concept of the "good life," accented for the last half century by progressives and twentieth century liberals. Here too, one can particularize. For instance, one might investigate the concept of political equalitarianism and contemporary patterns of game and fish conservation, or one might broach the problem of equalitarianism and the public access movement in recreation.

The political scientist in the dynamics field offers a number of tools for utilization. An examination of pressure groups discloses ample use of this political technique throughout the entire history of the public recreation movement. One might make an immensely revealing study of pressure group roles in the creation of existing outdoor recreational programs. Who were these pressure groups? What did they accomplish? How did they achieve their goals? Or one might trace the history of pressure groups in the recreational picture at different epochs in history. Which survived? Which didn't? Why? One might make an organizational analysis of recreational pressure groups, probing structure, operating procedures, financing. Certainly, the financing of outdoor recreational interest groups would be of interest to the many hard-pressed crusaders in the cause. In addition, the exploration of lobby techniques by recreation associations might be illuminating. What propaganda devices are most effective and why? Which medium of communications tells the story best? In this category might be developed an extremely interesting resume of propaganda approaches used over the years by those promoting outdoor recreational pastimes. Where have they succeeded, and where have they failed? What have been the significant accomplishments of attempts by recreationists to influence mass public opinion? And conversely, what have been the efforts of those groups indifferent or opposed to mass public recreation projects? Which tactics seem most significant in favorably disposing public opinion toward public recreation in the twentieth century?

The public opinion analyst enters the picture. By his polling efforts he can tell us just how the American public views overall recreation needs. His surveys likewise can recognize popular priorities. Furthermore, he can pinpoint more specific desires of recreationists. Also, he can identify intensity of opposition among the various groups involved.

These are a few research possibilities in political science. Whereas I have mentioned them in isolated context, the research political scientist might well incorporate contributions from all the components of his discipline in a single project. Moreover, in a given recreation study the researcher undoubtedly would borrow from the other social sciences, perhaps also from the natural sciences or from the humanities, should the occasion demand. Integrated research often may be an absolute necessity in answering concrete questions, and the alert political scientist must be prepared to take advantage of its possibilities.

At any rate, political science can make a distinct contribution to the better understanding of America's outdoor recreational needs and to an appreciation of the techniques necessary for the satisfaction of these.

V

PROSPECTIVE RESEARCH CONTRIBUTIONS OF ECONOMICS TO OUTDOOR RECREATION

David N. Milstein*

Appraisal of a discipline's research contributions is enhanced by a clear conception of what that discipline is about. Such understanding is particularly important with regard to economics, whose role is often misunderstood. The first section of this paper, therefore, will deal briefly with the nature and method of economics in studying any human behavior.

In a second section we shall explore the major changes in the real world, in our ideology, and in our intellectual tools which account for the resurgence of economists' interest in outdoor recreation. We shall indicate more directly, in the third section, the main lines along which economic research on outdoor recreation is developing and may be expected to proceed. Although our approach necessarily will emphasize the powers of the discipline, some attention will also be given to its limits.

THE NATURE AND METHOD OF ECONOMICS

The view of economics which we wish to advance is that of "a social science concerned with...scarce resources." In this context, "Resources are objects and services that are capable of satisfying human wants...(and) scarce resources are those that are insufficient to fill completely all the wants they cater to."1/**

As a social science, economics deals with aspects of human behavior--even though this is not always readily apparent from the curves and equations of the theorist. As a science, economics has as its aims prediction and control of the environment. The prediction is conditional only, involving hypothetical (if-then, or independent-dependent variable) statements. The control is a normative or policy goal, meaningful only within a framework of given or assumed value-judgments coupled with predictive knowledge as to what means lead to what ends.

In simplified form, the ideal progression of predictive knowledge is:

(1) a rudimentary stage, in which we merely postulate that some functional relationship exists--for instance, that the quantity of a specific type of outdoor recreation demanded in a given market depends somehow on the price charged for the experience, other things equal; or, symbolically, that $Q_d = f(P)$.

(2) a crude stage, in which we state something about the general form of the relationship--for example, that the demand is an inverse and possibly linear function of price, ceteris paribus, that is, $Q_d = aP+b$ $(a<0;\ b>0;\ Q_d,\ P\geq 0)$.

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* Department of Economics, University of Michigan. The author is grateful to Resources for the Future, Inc. for support of a larger research project underlying this paper, and to the Institute of Science and Technology, University of Michigan, for sponsorship of his participation in the Seminar. Opinions expressed are, of course, his own.

** See end of this paper for footnotes and references.

(3) a quantitative stage, in which we insert values for the co-efficients and parameters--here, say, $Q_d = 3P+12$; so that, if the simple relationship held and we had a value for P, we could predict (within statistical limits) a value for Q_d.

The state of our economic knowledge is often what here we have termed rudimentary or crude, at best only roughly quantified. That is particularly true with respect to behavior as multivariate, complex, and little studied as outdoor recreation. Yet even these feeble models can contribute insights that may promote better knowledge and, meanwhile, lessen the chances of predictive or policy errors.

Economics is differentiated from the other social sciences by its focus on resource scarcity in relation to human wants. Economic theorists concentrate on the "logic of choice" among alternatives, be the decision unit a household, a firm or other voluntary organization, or a government. How various decision-makers combine or transform resource inputs into desired outputs constitutes the supply side of economic analysis. It is here that technological efficiency--the relation between means and ends, no matter what the ends--is relevant. The demand side, on the other hand, involves the fulfillment of specified human wants--a matter of economic efficiency, or trying to maximize welfare--rather than merely maximizing some measure of output.[2/]

This view of the nature and method of economics differs from commonly held conceptions in several important respects. First, the discipline is by no means restricted to the study of the material aspects of man's existence, of a market-price economy, or of strictly individual ends. Second, there is no necessary assumption of a caricatured "Economic Man." While it is often convenient for theoretical purposes to investigate the consequences of rational behavior, empirical studies can just as well record whatever regularities appear in the behavior of a population, regardless of underlying motivations. Finally, we may note that the problem formulations of economists constitute a "dismal science" precisely because the emphasis is on the constraints to which any maximizing behavior is subject. Costs or foregone alternatives, budgets or income limits, rear their ugly heads in economic discussions of matters as esthetic or spiritual as, say, the development of national parks and forests. This does not mean, as we shall have occasion to re-emphasize below, that the economist likes dollars or hates people. It means, rather, that it is the special concern of his discipline to investigate the allocation of scarce means among alternative ends.

THE RESURGENCE OF ECONOMIC INTEREST IN OUTDOOR RECREATION

It may be unfair to label an auspicious trickle a full-blown resurgence. Nevertheless, there are considerable grounds for believing that a significant body of theoretical and empirical research in economics pertaining to outdoor recreation is indeed now in process of formation. Exploring the historic roots of this development will also provide a basis for terming the recent change a resurgence rather than a start.

Background

Why have economists not devoted more attention to outdoor recreation, as well as to other conservation and natural resource fields? For the American case, at least, a threefold answer is suggested: in part, they could have, but did not; in part, they could not; and, to a surprising degree, they could and did.

To begin with, throughout much of our history the realities of the American experience have militated against strong concern about natural resource scarcities.[3] Open land, in the countryside as well as in cities and towns, appeared virtually boundless as late as the formative years of a generation still alive. Other resources conducive to outdoor recreation, such as forests and water, until recently likewise have appeared to be in abundant supply. The net effect of a smaller population, limited in its leisure and income and mobility, was an actual lack of relative scarcity of outdoor recreational resources.[4] Particularly humanistic and visionary economists such as Alfred Marshall and John Stuart Mill did refer in passing to possible shortages of parks, of land, or of privacy someday.[5] They and later colleagues well into the Twentieth Century, however, concentrated what empirical concerns were displayed on much more immediate and pressing scarcity problems.[6]

Part of the explanation for why economists could but didn't study outdoor recreation lies also in the widely prevailing ideologies. Whether or not certain dominant modes of thought should have been prompted by the actual course of our economic development, it remains true that most economists held to a market-price, laissez faire orientation and a greater preoccupation with goods than with services.[7] A dampening effect on economists' concerns with such matters was also exerted by the very nature of the conservation, park, and playground movements. Activist bents and reformist zeals accomplished much, and it took no careful economic analysis to see the unique preciousness--and minimal pressure for alternative uses--of places like Yellowstone and Yosemite. The lingering of absolutist dogmas and the persisting confusion of technological with economic efficiency have, however, deprived the conservationists of potentially valuable present day insights and allies.[8] Finally, of course, there was the Puritanic view of leisure, and thus of the study of leisure, as essentially frivolous.

In any event, economists for a long time truly could not study outdoor recreation, or other conservation problems, in proper fashion. The issues relevant to any such resource uses involving substantial considerations of public policy, had been identified at an early stage. A massive literature on welfare economics--dealing with such matters as spillovers of individual benefits and costs, indivisibilities, consumer sovereignty, and social time preference--had indicated profound difficulties in prescribing governmental action.[9] The expenditure side of the public finance field, in relation to allocative efficiency, had in fact shrivelled away. Economists specializing in public finance concentrated, instead, almost exclusively on the revenue side; i.e., on taxes and debt.

There were, nonetheless, groups of economists, particularly those of a problem-oriented inclination, who could and did study outdoor recreation. One such group, with strong roots in sociology and geography, was the Wisconsin school of institutionalists, most notably the agricultural and land economists.[10] Closely related by training and temperament were the researchers who turned out series of reports on land resource problems, including park and forest use, in the Department of the Interior and the National Resources Planning Board (plus derivative agencies) during the New Deal era.[11]

A third group has consisted of applied economists, often connected with university bureaus of business research, in states where the tourist industry has been of importance. Typically, they have done market-research type surveys of travel and vacation behavior, which have at times included studies of visitors to specific recreational sites such as national or state parks.[12] Commercial market researchers have made similarly motivated and structured studies, chiefly under the auspices of periodical publishers (Sports Illustrated, National Geographic, Wall Street Journal, Curtis Publishing Company, etc.). The entire set of applied efforts however, has been coordinated quite poorly. These studies abound with differences in treatment, even on similar matters, which make comparisons among them frustratingly difficult.

Recent Developments

All three elements which hindered the willingness and ability of economists to make research contributions on outdoor recreation have changed considerably in recent years.

First, the realities of relative resource scarcities, as well as our awareness of them, have become strikingly different in the post-World War II era. These years of prosperity and a rapidly growing population have brought great strains on urban and rural land use and a revolution in mass leisure. Substantially risen discretionary consumer expenditures and personal geographic mobility also heightened the demand pressures, which were insufficiently matched by increases in supplies of outdoor recreation resources.[13] In order to deal with these developments systematically, the 85th Congress established the Outdoor Recreation Resources Review Commission (ORRRC).

Secondly, general attitudes have changed with respect to the role of government and planning, as has the predominant cast of thought among professional economists. Complexities have been encountered, serving to caution the doctrinaire of the political right and left, but the middle of the road has come to include a considerable degree of governmental interference in the private sectors of the economy.[14] With regard to conservation itself, the changing nature of the problems has begun to penetrate professional and organizational attitudes. In fields in which resource problems have hitherto been considered predominantly from a technological point of view, discussions have begun to shift noticeably toward inclusion of behavioral issues as well.[15]

Third, there have been several noteworthy developments in the intellectual equipment with which economists can attack problems as complicated as the use of outdoor recreation resources. Fed by advances in theory, significant progress has been achieved in three particularly relevant substantive fields:

(1) Applied welfare economics--notably, with regard to benefit-cost analysis, and thereby on the expenditures side of public finance;[16]

(2) Location theory and regional science--including explicit models of spatial behavior;[17] and

(3) Consumer economics.[18]

Concomitantly, powerful new tools have been developed, which involve the greater use of quantitative methods:

(1) Econometrics--and related advances in statistics and mathematical economics;[19]

(2) Survey research;[20] and

(3) Electronic computers--expanding the possibilities of mass data processing; also, more recently, allowing the detailed treatment of less aggregative simulation models of economic behavior.[21]

It would be too much to claim that these concepts and tools have been applied to a very great extent toward the study of outdoor recreation, as yet. We will claim, however, that glimmerings of such applications are already visible.

THE ECONOMICS OF OUTDOOR RECREATION

Until recently, we have seen, economic research on outdoor recreation has been almost entirely problem-oriented, empirical, and largely under the auspices of land economists and government or university market researchers. Useful though these works have been, their origins and nature have contributed to the fragmentary and uncoordinated state of the field to date. The great prospective contributions of economic research to an understanding of outdoor recreation behavior lie, we believe, in a linking of this empirical bent with the emergent theoretical constructs and research techniques mentioned above. Further mutual enrichment will then occur increasingly in relation to the more rigorous research on outdoor recreation which likewise has begun in other fields of behavioral science.

Outdoor recreation can be regarded, from this contemporary vantage point, as part of a vast set of ways in which people can use their leisure.[22] The human wants represented by these activities generate the demand side in an economic framework. The sets of generally land-extensive facilities or resources mobilized to fulfill these wants generate the supply side of the analysis.[23]

Which models are most appropriate for predicting how much of what kinds of outdoor recreation resources people will effectively demand depends on just what we are trying to predict, and for how far ahead. For long-run projections of national aggregates, relatively simple models which extrapolate past trends (with or without analytic modification) are still often useful to indicate orders of magnitude or to provide rough consistency checks.[24]

For more detailed and immediate prediction, however, as well as for the eventual improvement of long-range projections, we need more full specified behavioral models. In highly simplified form, the framework indicated by demand theory in economics is:

$$D_r = f\ (P_r,\ Y,\ Pa...m;\ T).$$

Here, Dr is demand for outdoor recreation visits, Pr is the price or cost of such visits, Y is the relevant income of the demanding unit, and Pa...m are the costs of closely related alternatives and jointly demanded goods and services; all for given T, i.e., tastes.

The function of so simple a model is merely to suggest the nature of the processes and variables on which attention should be focused, and to systematize such attention. It can, even in its present form, provide at least two helpful insights to which we can only briefly allude here. First, since leisure behavior often involves significant travel time and site activity time, the economically familiar process by which the consumer maximizes satisfaction, in relation to money prices and subject to a money income constraint, must be extended. For such activities, there is a completely parallel, simultaneous process involving alternative time costs and leisure-time budget constraints. Second, the meaningful unit for measurement of outputs on the demand side (but not on the supply side!) is the composite experience of a visit, rather than the much advocated visitor-day.

The basic demand model may be elaborated in several main directions. One avenue of inquiry is to delve back of the budget constraints to ask how the marginal decisions are made that trade off between work-income and the leisure with which outdoor recreation can be undertaken. The economic literature in this field is a bare beginning, consisting of some theoretical speculations occasionally linked to work week, "moonlighting," and related statistics.[25] A major limitation to economic investigations in this area is that the leading independent variables are strongly sociopsychological by nature. These the economist customarily takes as institutional givens; he has no special skill in studying them.

If we start with the demand model as given, for some purposes it is appropriate to develop what may be termed an outflow variant. If we wish, for example, to predict the outdoor recreation activities of a particular population, our set of dependent variables may abstract from the specific recreation sites where the activities take place. This is the approach in a statistically sophisticated unpublished investigation recently completed for ORRRC and the National Park Service by the Survey Research Center at the University of Michigan. It is also typical of many studies done by the National Recreation Association, and others reported in the sociological journals.[26] The outflow approach typically is useful for decision-making by urban recreation planners, resort advertisers, facility system administrators, etc., who may need to predict, say, metropolitan area demand for swimming.

If, on the other hand, our concern includes the demand that will confront a specified recreation site, the inevitable simplification would be toward what we shall term an inflow model. Clawson has made excellent analytic use of national park visitor surveys so designed. Other examples are the South Dakota reservoir recreational surveys; the Miami area tourist surveys; a study of visitors to Jamaica; and a Detroit Metropolitan area park user survey.[27] These pioneering studies have significant failings, statistically and analytically, but indicate lines along which fruitful work can be done.

Still other studies have combined the outflow and inflow approaches. Some have checked behavior in transit between specified origins and types of destinations, as in the state recreation and tourist surveys and, for example, the National Capital Area Health and Welfare Council "Report on Spare Time Activities and Interests of Youth" (Preliminary, 1960). Others, such as the 1955-1960 Travel Market studies by John B. Lansing and colleagues at the Michigan Survey Research Center, have abstracted from specific locational considerations and instead have concentrated on charting tendencies to undertake, for example, various types of vacation travel.

The methodology underlying all such studies is not always purely economic. Very often it spreads into a general technique common to many fields of social research. Significant associations are sought between various types of socioeconomic variable (age, sex, family life cycle, urban-rural, etc.) that the economist's model lumps under the "taste" element. Sociologists such as Foote and Meyersohn have in fact shown explicitly that the approach used in such aggregative economic studies as the Wharton School Study of Consumer Expenditures (cited by Kaplan) can be matched by time-budget expenditure studies with analogous methods and categories.[28/]

On the supply side, the economists' contributions to date are far more sketchy. This is in part due to the greater need for demand estimation, given the explosive growth in use of outdoor recreation areas, and in part due to difficulties in obtaining cost data from commercial sources. The corresponding simple supply model is:

$$S_r = f\ (P_r,\ P_{n\ldots z};\ Pl,\ Te),$$

where S_r, the supply of recreation services offered depends on their prices, (P_r) and the prices of the required land, labor, and capital inputs ($P_{n\ldots z}$); for various sizes of plant (Pl) and specified technologies (Te). As indications of the sort of studies which can be done, there are: a dissertation on the American hotel industry, a brief study of Minnesota resort profits, a detailed input-output accounting report on Miami area tourist facility expenditure multipliers, and a Forest Service study that attempts to estimate campground, fishing, and other recreational carrying-capacity coefficients.[29/]

When the goal is a guide to policy, rather than prediction alone, the economist is on much shakier ground. Some progress has been made, however, in clarifying the issues. The water resources literature cited in footnote 16 above, for example, has helped to distinguish the gross from net benefits, as well as national-level investment criteria and from measures of regional or local benefits. Lack of acquaintance with these distinctions all too often has vitiated the impact of geographic and other studies which presented gross local benefits estimates as proper measures of the value of outdoor recreation. The economic discussions are leading to something better than the rigid rule-of-thumb acreage standards which have bedevilled the outdoor recreation planners.[30/] Lastly, the public finance literature can show the important differences among: (a) benefit-cost investment criteria; (b) financial burdens of outdoor recreation facility beneficiaries; and (c) the rationing effects of user charges.

The major limits to the prospective contributions of economics to outdoor recreation research on prediction lie in those determinants of behavior which are outside the scarcity orientation. The effects of culture, institutions, tastes, attitudes, etc., can be handled by competent statistical researchers from any of the behavioral disciplines, if and when these effects are expressed operationally. An economist has no special disciplinary expertise in these matters, qua economist. The same is true on the supply side, for matters of technology, which are properly brought into social science models in the form of advice from qualified technical experts. When it comes to outdoor recreation policy decisions, current work is beginning to show that the economist can advise on the efficiency of resource allocation, but only in a very special welfare economics sense. Again, the many "extra-economic" policy considerations, which may often be overriding, are beyond his special competence.

The major points which we hope that this paper has demonstrated are that the field of economics has begun to apply some powerful tools to the analysis of increasingly important problems in outdoor recreation, and that reasonable roots exist for what is being attempted. By regarding outdoor recreation systematically as an activity, a stream of services, and an industry, we are passing beyond the necessary original stages of philosophic speculation and isolated studies.[31] The rough state of our knowledge thus far suggests the need for continuing and strengthening the rigorous social science approaches which we have tried to sketch and sample for this one discipline.

FOOTNOTES AND REFERENCES

1/ Tibor Scitovsky, Welfare and Competition (Chicago: Richard D. Irwin, 1951), p. 3. For more elaborate discussions of this view, cf. Kenneth E. Boulding, The Skills of the Economist (Cleveland: Howard Allen, 1958), and Lionel C. Robbins, An Essay on the Nature and Significance of Economic Science, 2nd rev, ed. (London: Macmillan, 1935).

2/ The distinction is illustrated well by the basic thesis of John Kenneth Galbraith in The Affluent Society (Boston: Houghton Mifflin, 1958), where it is maintained that the United States economy is technologically efficient at producing the wrong (i.e., economically inefficient) composition of output. Using outdoor recreation to exemplify his charge of social imbalance, or public poverty in the midst of private plenty, he states (p. 253):

> The family which takes its...air-conditioned, power-steered, and power-braked automobile out for a tour passes...into a countryside that has been rendered largely invisible by commercial art.... They picnic on exquisitely packaged food from a portable icebox by a polluted stream and go on to spend the night at a park which is a menace to public health and morals. Just before dozing off on an air mattress, beneath a nylon tent, amid the stench of decaying refuse, they may reflect vaguely on the curious unevenness of their blessings.

3/ Cf. Hans Huth, Nature and the American: Three Centuries of Changing Attitudes (Berkeley: Univ. Calif. Press, 1957), and David M. Potter, People of Plenty (Chicago: Univ. Chicago Press, 1954). An informative treatment of the resultant public land policies is given in Marion Clawson and Burnell Held, The Federal Lands: Their Use and Management (Baltimore: JohnsHopkins Press, for Resources for the Future, Inc., 1957), and for recreational land in particular, in Land for the Future (Baltimore: Johns Hopkins Press, for Resources for the Future, Inc., 1960), by the same authors plus Charles H. Stoddard. Also see V. Webster Johnson and Raleigh Barlowe, Land Problems and Policies (New York: McGraw-Hill, 1954).

4/ This is by no means to claim that Nineteenth Century Americans led rich recreational and leisure lives. Cf. Foster Rhea Dulles, *America Learns to Play* (New York: D. Appleton-Century, 1940), especially Chapter XVI, "Farm and Countryside," reprinted in Eric Larrabee and Rolf Meyersohn, editors, *Mass Leisure* (Glencoe, Ill.: The Free Press, 1958).

5/ Alfred Marshall, *Principles of Economics*, 8th ed. (London: MacMillan, 1949), on open space:

> There is no better use for public and private money than in providing public parks and playgrounds in large cities...(p. 167). The want of air and light, or peaceful repose out-of-doors for all ages and of healthy play for children, exhausts the energies of the best blood of England....By allowing vacant spaces to be built on recklessly... we are sacrificing those ends toward which material wealth is only a means. (pp. 547-48).

John Stuart Mill, *Principles of Political Economy*, People's edition (London: Longmans, Green, Reader, and Dyer, 1871), Book IV:

> A population may be too crowded, though all be amply supplied with food and raiment....Solitude...is essential....Nor is there much satisfaction in contemplating the world with nothing left to the spontaneous activity of nature; with every rood of land brought into cultivation...and scarcely a place left where a wild shrub or flower could grow...(p. 454.)

(The author is grateful to Harold J. Barnett for directing these passages to his attention.)

6/ For a vigorous statement of the thesis that the economists' "conventional wisdom" concerning scarcity has been subject to a harmful cultural lag, see the first five chapters of J. K. Galbraith, *op. cit*.

7/ See Gilbert Banner, "Why More Economists Are Not Conservationists," *Trans. Twenty-Fifth No. Amer. Wildlife Conf.*, March 7-9, 1960 (Washington: Wildlife Mangt. Inst., 1961?), pp. 436-44. The welfare issues however, are far more complex than indicated in this brief article, as can be seen by reference to: Anthony Scott, *Natural Resources: The Economics of Conservation* (Toronto: Univ. Toronto Press, 1955); Siegfried von Ciriacy-Wantrup, *Resource Conservation: Economics and Policies* (Berkeley: Univ. Calif. Press, 1952); and various writings on public expenditures cited in footnote 16 below.

8/ On the misplaced scientism that sparked, but has also come to plague, the conservation movement, see Samuel P. Hays, *Conservation and the Gospel of Efficiency* (Cambridge: Harvard Univ. Press, 1959). A current example of the strengths and weaknesses of the still typical moral exhortation approach is David Brower, ed., *The Meaning of Wilderness to Science*: Proc. Sixth Bien. Wilderness Conf. (San Francisco: Sierra Club, 1960).

9/ A convenient, though highly technical, review of these writings is given by E. J. Mishan in "A Survey of Welfare Economics, 1939-1959," *Econ. Jour.*, June 1960, 197-265.

10/ The current state of this stream of endeavor, with ample citation of the relevant earlier literature, is presented in Raleigh Barlowe, *Land*

Resource Economics (Englewood Cliffs, N.J.: Prentice-Hall, 1958). It is a fascinating exercise in the anticipation by scholars of problems which reached the public consciousness much later, to read the discussions of outdoor recreation problems by Wehrwein and Parsons in 1933 (*Recreation As a Land Use*, Wis. Agr. Expt. Sta. Bul. 422, 1932), or by Renne in 1947 (*Land Econ.*; New York: Harper). See also Leonard A. Salter, Jr., *A Critical Review of Research in Land Economics* (Minneapolis: Univ. Minn. Press, 1948).

11/ The literature is too voluminous to be cited here, but can be located easily by consulting Roland R. Renne, *op. cit.*, plus the usual government documents reference sources. Many of the lesser-known studies are noted in the bibliography accompanying the paper by Bultena, Lucas, and Hathaway presented at this Seminar.

12/ A comprehensive sampling of this work is given in the bibliography of the Minnesota Arrowhead Association, *Vacation Travel Survey*, 1958-1959 (St. Paul: Minn. Office of Iron Range Resources and Rehabilitation, 1960?). The Federal Reserve Banks of Boston and Philadelphia have sponsored a number of regional vacation industry studies; e.g., Chapter 6 in Arthur A. Bright, Jr. and George H. Ellis, eds., *The Economic State of New England* (New Haven: Yale Univ. Press, 1954). See also C. Frank Brockman, *Recreational Use of Wild Lands* (New York: McGraw-Hill, 1959), particularly Chapter 7, "Economic Value of Recreational Lands."

13/ See various essays in Larrabee and Meyersohn, *op. cit.*; Charles E. Silberman, "The Money Left Over for the Good Life," *Fortune*, November 1959, 134 ff., reprinted in Editors of Fortune, *Markets of the Sixties* (New York: Harper, 1960); Marion Clawson, "The Crisis in Outdoor Recreation," *Amer. Forests*, March and April 1959 (Resources for the Future Reprint No. 13); and Max Kaplan, *Leisure in America: A Social Inquiry* (New York: Wiley, (1960).

14/ Cf. J. K. Galbraith, *Economics and the Art of Controversy* (New Brunswick, N.J.: Rutgers Univ. Press, 1955), and Alvin H. Hansen, *Economic Issues of the 1960's* (New York: McGraw-Hill, 1960). Hansen's work also emphasizes the emerging importance of the service industries, and of national concern with the quality--rather than mere quantity--of resource uses. The crude state of our knowledge concerning recreation and other service industries is documented in George J. Stigler, *Trends in Employment in the Service Industries* (Princeton: Princeton Univ. Press, for the Natl. Bur. Econ. Res., 1956).

15/ A most impressive example in the present area of concern is the report by Samuel T. Dana, *Problem Analysis: Research in Forest Recreation* (Washington: Forest Serv., 1957). On conservation, see Henry J. Romney, "A New and Human Science," Part I, *Sports Illus.*, March 28, 1960, 75-79. In the water resources field, see Jack Hirshleifer, James C. De Haven, and Jerome W. Milliman, *Water Supply: Economics, Technology, and Policy* (Chicago: Univ. Chicago Press, 1960). The proceedings of this Seminar likewise illustrate the trend.

16/ See John V. Krutilla, "Welfare Aspects of Benefit-Cost Analysis," *Jour. Polit. Econ.*, June 1961, 226-35; the books by Eckstein, Krutilla and Eckstein, McKean, and Musgrave cited therein; and that by Hirshleifer, De Haven, and Milliman cited in footnote 15 above.

17/ Consult appropriate portions of Walter Isard *et al.*, *Methods of Regional Analysis: An Introduction to Regional Science* (New York: Wiley, and the Technology Press of M.I.T., 1960).

18/ Recent advances, and the current state of the field, are portrayed in Nelson N. Foote, ed., *Household Decision-Making* (New York: N.Y. Univ. Press, 1961). Also see an earlier volume in the same series, Lincoln H. Clark, editor, *Consumer Behavior: Research on Consumer Reactions* (New York: Harper, 1958), which contains "A Review of Recent Research on Consumer Behavior," by James Morgan, with an elaborate bibliography.

19/ For this and the following two footnotes, see "The Interaction of Tools and Problems in Economics," in Tjalling C. Koopmans, *Three Essays on the State of Economic Science* (New York: McGraw-Hill, 1957).

20/ Selected aspects of the method as applied to economic behavior are treated in George Katona, *The Powerful Consumer* (New York: McGraw-Hill, 1960) and in Lawrence R. Klein *et al.*, *Contributions of Survey Methods to Economics* (New York: Columbia Univ. Press, 1954).

21/ This very significant methodological breakthrough is described in Guy H. Orcutt *et al.*, *Microanalysis of Socioeconomic Systems: A Simulation Study* (New York: Harper, 1961).

22/ Cf. the author's "An Economic Framework for the Study of Leisure," paper read at the Tenth Annual Meeting of the Society for the Study of Social Problems, New York, August 28, 1960. Though allowance must be made for the "non-leisure" demand for outdoor recreation generated by the business sector via expense accounts, the problem is essentially one of household sector demand.

23/ Elements of an economic formulation of the problem were presented some time ago, by Julius Weinberger in "Economic Aspects of Recreation," *Harvard Business Review*, Summer 1937, 448-63; by J. Frederic Dewhurst and Associates in *America's Needs and Resources* (New York: Twentieth Century Fund, 1947), Chapter 12 (updated: *op. cit.--A New Survey*, 1955); and by Lawrence G. Hines in "Wilderness Areas: An Extra-Market Problem in Resource Allocation," *Land Econ.*, November 1951, 306-13. However, greater exploitation of such leads had to await the developments cited in this paper. That even eminent economists lacked clarity as to the predictive role of economics in this area, and often misconceived the role of dollar measures of benefit, is shown via a hindsight look at the Prewitt report: *The Economics of Public Recreation* (Washington: Natl. Park Serv., Land and Recreation Planning Div., 1949). By way of contrast, a rigorous modern conceptual framework has been formulated by Professor Ivan M. Lee in an as yet unpublished ORRRC paper, "Economic Analysis of Outdoor Recreation Development" (Preliminary, March 1961).

24/ Cf. Marion Clawson, "The Crisis...," cited in footnote 13 above, as well as his "Our National Parks in the Year 2000," *National Parks Magazine*, July 1959, and *The Dynamics of Park Demand* (New York: Regional Plan Assoc., 1960). Also see the outdoor recreation projections in a forthcoming Resources for the Future staff study appraising American resource use in the year 2000; and the forthcoming projections by the ORRRC staff.

25/ Some leading theoretical treatments are in Tibor Scitovsky, *op. cit.*, Chapter V, and in the paper by Mahoney in Nelson N. Foote, editor, *op. cit.* A mixed treatment is illustrated by H. Gregg Lewis, "Hours of Work and Hours of Leisure," *Proc. Industrial Relations Res. Assoc.*, 1956 (L. Reed Tripp, ed.). For instances of statistical approaches, see the papers by Zeisel and by Wolfbein reprinted in Larrabee and Meyersohn, *op. cit.*, which also contains a perceptive impressionistic contribution on the subject by Swados.

26/ Eva Mueller and Gerald Gurin, with Margaret Wood, *The Demand for Outdoor Recreation* (Ann Arbor: Inst. for Social Res., April 1961). For the National Recreation Association studies, see also catalog listings under George D. Butler, research director. Several of the sociological studies are reported on by Kaplan, *op. cit.*

27/ Marion Clawson, "Methods of Measuring the Demand for and Value of Outdoor Recreation," Resources for the Future Reprint No. 10, February 1959; Business Res. Bur., State Univ. So. Dak., *Recreational Survey of Lewis and Clark Lake*...Summer 1960 (Vermillion: Bul. No. 68, March 1961); Miami studies cited in Minnesota Arrowhead Association, *op. cit.*; G.E. Cumper, "Tourist Expenditure in Jamaica," *Social and Econ. Studies*, September 1959; and Detroit Metropolitan Area Regional Planning Commission, *Park Users Survey* (Part II, April 1959). (A subsequent Detroit study (Part III) links the inflow data with outflow information obtained from a household survey.)

28/ Nelson N. Foote, "Methods for Study of Meaning in Use of Time," in Robert W. Kleemeier, editor, *Aging and Leisure* (New York: Oxford Univ. Press, 1960); Nelson N. Foote and Rolf Meyersohn, "Allocations of Time Among Family Activities," Paper for the Fourth World Congress of Sociology, Stresa, Italy, September 1959 (Univ. Chicago: Center for the Study of Leisure). Also compare H.S. Houthakker, "An Economist's Approach to the Study of Spending," and James N. Morgan, "Household Decision-Making," both in Nelson N. Foote, ed., *op. cit.*, and Ruth P. Mack, "The Economics of Consumption," in Bernard F. Haley, ed., *A Survey of Contemporary Economics*, Volume II (Homewood, Ill.: Richard D. Irwin, 1952).

29/ Respectively: William A. Hayes, "An Economic Analysis of the American Hotel Industry," unpublished dissertation (Washington: Catholic Univ., 1952); Reuel I. Lund, "Minnesota Resort Profits," *Business News Notes* (Minneapolis: School Business Admin., Univ. Minnesota, September 1956); Metropolitan Dade County Planning Dept., *Economic Base Report--Tourist Industry*, 1960; and "The National Forest-Outdoor Recreation Resources Review--Work Plan" (Washington: Forest Serv., 1959).

30/ As examples of the literature on acreage standards, see Baltimore Regional Planning Council, *Standards for Parks, Recreation Areas, and Open Spaces*, Tech. Bul. No. 2 (Baltimore: Md. State Planning Comn., November 1958, and citations in the standard texts by Harold D. Meyer and Charles K. Brightbill, Martin H. and Esther S. Neumeyer, and George D. Butler. Some difficulties in the field of federal project benefit formulations are illustrated in U.S. Senate, 85th Cong., 1st sess., "Evaluation of Recreational Benefits from Reservoirs," Hearings before a Subcommittee on Public Works, March 12-14, 1957. Highway Research Board, Special Report 56, *Economic Analysis in Highway Programming, Location and Design* (Washington: Natl. Acad. Sci.-Natl. Res. Council, Pub. 775, 1960) shows some of the convergence which has begun between highway specialists' and economists' formulations of benefits issues.

Compare Martin Beckmann, C.B. McGuire, and Christopher B. Winsten, *Studies in the Economics of Transportation*. Specific applications to outdoor recreation are discussed in the forthcoming 1961 *Proceedings* of the Michigan Academy of Science, Arts, and Letters (Geography Section; Ann Arbor); in Clawson, "Methods..." *op. cit.*; and in an unpublished paper, based in part on California studies, by Lionel J. Lerner: "Evaluation of Recreation."

31/ The final reports of the Outdoor Recreation Resources Review Commission are expected to be landmarks in social research along these lines. Consult interim reports on its activities by the Commission, and summaries such as that by Laurence I. Hewes, Jr., "The Demand for Outdoor Recreation--Implications for Natural Resources Allocation," in Harold L. Amoss, ed., *Water: Measuring and Meeting Future Requirements*, Western Resources Papers (Boulder: Univ. Colorado Press, 1961).

DISCUSSION GROUP SUMMARIES

Six groups were formed at the conference. Each discussed the same broad topic of needed research, but with varying emphases. The results of the afternoon-long discussions were summarized and presented to the full group the following morning.

Group 1. Discussion led by V. W. Hella and I. V. Fine; summarized by Norman Smith.

I. Research on the place and potential of private land owners in providing space and facilities for outdoor recreation.
   1. What is the need? What will it be in the future?
   2. What is the business or profit potential? What are the public relations benefits?
   3. What is the competition from public areas? How might this competition be managed?
   4. Where should this type of development be encouraged?
   5. What is the public attitude towards private recreational facilities for hunting, fishing, and other forms of recreation now normally the function of the government? Will people pay more for extra services?
   6. What are the tax problems?
   7. Should private-land public recreation be subsidized and in what way? Tax reductions?
   8. Can or should forest industry landowners be encouraged to operate, or to lease recreational facilities?
   9. What are the problems private enterprise will encounter--vandalism, liability, public rights to roads? What control will they lose?
   10. What possibilities exist for private leasing of public lands where public funds are inadequate or development is slow?
   11. Conversely, should public agencies lease water access sites and camping sites from private land owners for public use? With the price of recreational land and shoreline what it is today, would this approach be a better use of public funds?

II. Relative responsibilities of various levels of government in providing outdoor recreation.
   1. How are the responsibilities of federal, state, and local levels of government changing and why?
   2. What are the effects of costs and financing on the level of government activity in recreation?
   3. At what level can recreation facilities best be provided from a political standpoint? This involves a study of influences, pressures, and backing to get things done.
   4. What is the competition within government agencies at the same level for funds? What overlapping of statutory or assumed authority for recreational functions and related purposes exists?

III. Research on establishing standard methods of measuring recreational use and values.
   1. What constitutes outdoor recreational use? Are we concerned with the complete field of recreation which takes place outdoors? Do we include metropolitan beaches, resorts, etc.? Where do we draw the lines?

2. Definitions of terms are needed: Types of area--historical, natural, scientific, camping, picnicking, various degrees of wilderness; types of users--such as hikers, berry pickers, bird watchers, etc., which may or may not be identifiable by the type of area they are in; units of use--how long does use have to last to be counted? What is a visit? Establishing uniform units of measurement between states and on a national level is desirable.
3. What determines the capabilities of areas?
4. How may nonmonetary values be measured?
5. Methods of sampling various types of use, particularly where actual complete counting is impossible, need development.
6. Compilation of already available methods and approach to these measurements is needed.

Group 2. Discussion led by Grant Sharpe and H. A. Svenson; summarized by Grant Sharpe.

The group concentrated its attention on the following question:

I. What are the problems and opportunities for public recreation on private land?
   A. What are the obstacles that stand in the way of the private landowner who wishes to develop his land for public recreation? Can these obstacles be removed by public agencies? Possible fields of study are:
      1. Loss of control when private companies provide roads and trails for the public. (At present these roads and trails may become public property after a period of time.)
      2. Liability problems when the public is permitted to use private forest lands and other areas.
      3. Compatibility of various kinds of recreational uses with private ownership and use of forest and other lands.
   B. In what ways might the establishment of public parks in private or commercial recreational areas aid in the economic development of an area?
   C. What is the relationship of public and private responsibility in areas where the ownership of recreational resources is shared or well divided between private and public owners? Often this resource is highly intermingled between public and private owners.
   D. How may one determine which part of the overall recreational potential of an area is best handled by private interests and which should receive public assistance?
   E. What knowledge would help in considering the establishment of nature trails and conducted tours in more public and private forests?

Group 3. Discussion led by A. F. Helmsley and H. W. Kolka; summarized by H. W. Kolka.

The main problem is an old one: the relationship of man and land--this time the relationship of man and potential recreational resources of land. This relationship changes with degree and type of pressure.

- I. Needed basic inventory.
  - A. Of the physical resource using:
    - 1. Physical criteria:
      - a. Kind of usable land terms now and for the future (water, land, valley, meadow, ridge, stream bank, etc.).
      - b. Size of area.
      - c. Distance from pressure centers (population).
    - 2. Cultural criteria:
      - a. Ability to support different kinds of activity.
      - b. Scenery (esthetic, spiritual, scientific aspects).
      - c. Facilities and services provided.
      - d. Solitude and privacy.
  - B. Of the users (not elaborated upon).
- II. Recommended studies.
  - A. Measure tastes and attitudes and their formation and influence.
  - B. Investigate the problem of waste disposal.
    - 1. Make use of pilot camps (before-after comparisons).
    - 2. Water contamination problems--type, degree, control.
    - 3. Study container design (materials used in cans, etc.).
    - 4. Mechanics and economics of handling refuse.
    - 5. Vandalism.
- III. Other suggestions.
  - A. Preparation of a uniform questionnaire (listing pertinent data about individual--distance traveled, wishes, interests, etc.).
  - B. Depository or clearing house for recreational studies, data, etc.

Group 4. Discussion led by E. G. Pleva and C. D. Harris; summarized by Robert C. Lucas.

Group 4 discussed recreation research problems under three broad headings: (1) Who should provide what sort of outdoor recreation opportunities? (2) What types of recreational land and facilities are needed where? (3) What account should be taken of land uses other than recreation? Each was considered in some detail, type studies were selected, and needed information listed.

- I. Resolving conflicting or uncoordinated responsibilities for the provision of outdoor recreation in a given area.
  - A. Selected type studies:
    - 1. The fringes of large urban areas--Detroit, with an international fringe, Chicago-Milwaukee, with an interstate margin.
    - 2. Rural areas--The Grand Portage area in Minnesota, with the Bureau of Indian Affairs, the National Park Service, State and County governmental units and private interests all directly involved; the U.S. Forest Service and nearby areas of Canada are also affected.
  - B. Needed information:
    - 1. What are the present governmental and private groups; what are their powers and areas of jurisdiction?
    - 2. How are these powers being exercised?
    - 3. What are the relationships of various levels of government and of government and private land owners to one another?
    - 4. What is lacking in these powers and relationships?

(The group members emphasized that a good deal of this information is already available, and the ORRRC will add much more. Much analysis of existing data should be possible.)

II. Planning outdoor recreation areas in the light of existing and anticipated demand.
  A. Selected type areas:
    1. Presently critical--Devil's Lake State Park, Wisconsin.
    2. Newly opened--The North Shore of Lake Superior, accessible by Highway 17, opened in September, 1960, where land use has been temporarily "frozen".
  B. Needed information:
    1. What kind of an outdoor recreation resource base is needed to serve the aggregate population "properly" now and in the future? (And, how is "properly" defined?).
    2. What sort of a resource base is available? (Again, existing surveys provide the data for much analysis.).
    3. What are the physical or natural recreational capabilities of an area?
    4. What are the demands for different uses of these capabilities? Future demands?
    5. Which of these different uses can be successfully combined in one area, primarily in terms of user attitudes? Which are better separated?
    6. To what extent can an area have capabilities created or engineered in order to meet demand?
    7. Can techniques of analysis of existing areas be applied to newly opened or to-be-opened areas?
    8. Is it possible to determine in advance, by any technique, the kind and amount of use an area will attract?

III. Planning for outdoor recreation in an area which demands multiple use because of its resource base, the size of area involved, or local economic dependence.
  A. Selected type areas:
    1. An area of present and potential critical use competition--
      a. Rural--the Porcupine Mountains State Park, Michigan, where minerals and timber as well as recreation are potential resources.
      b. Urban fringe--especially as related to public access to waterfronts and superlative areas, which brings us full circle back to the Detroit and Chicago-Milwaukee areas. The Twin Cities might be added as an area of public and private use competition.
    2. An area of integrated uses--the Boundary Waters Canoe Area, Superior National Forest. The integration is very controversial, but still seems rather successful.
  B. Needed information:
    1. What are costs, direct or opportunity costs, of recreational land use? In turn, what are the costs of other uses in terms of foregone recreation?
    2. What uses may be combined to what degree, especially in terms of how recreationists perceive the forest? (Do recreationists recognize or object to logging, and conversely, do they consider decayed, dead, and down timber as unsightly or picturesque?).

The question of research priorities was also discussed, but no conclusions were reached. It was felt that need, personnel available and their skills and interests, money, and other factors all influenced choices of research.

Group 5. Discussion led by John Beale and Charles Doell; summarized by Wakelin McNeel. Jr.

The group concentrated its discussion on the following two topics:

1. Coordination in research
2. Understanding recreational needs and wants of people.

After the papers were presented, many people felt that there was a great deal of research work in recreation being done which they had not been aware of. Educators, representing a wide variety of disciplines, representatives of municipal, state, and federal agencies, as well as people from industry and privately endowed agencies were not only interested, as evidenced by their attendance, but many were actively engaged in research work of one kind or another. It was deemed important by this group that some means or method be provided to acquaint interested individuals with the problems and scope of research being done, and to prevent any unnecessary duplication or overlap in work.

By the many numbers and kinds of questions raised, it was evident that a lack of data was hampering work. It would seem that there is a difference of opinion relative to just what is important in recreational research, at what level it should be initiated, or just which agency can most effectively acquire certain worthwhile data. There appear to be at least four methods of transferring information at present: seminars such as this one, professional societies, interagency cooperation, and through continuing agencies. No society or agency is established at present to standardize the information needed and collect and distribute information to all concerned. It was realized that although better cooperation and uniformity of results could be obtained by an organization on a regional basis, the problem is of national concern. As information is of little avail unless it be shared and utilized, and because present means for doing so are wholly inadequate, this group made a proposal in the form of a motion to the effect that: Means be undertaken to standardize the type of information needed in recreation, collect the data, and compile and disseminate the information to all interested persons. By such means all interested persons could keep abreast of developments in the field, keep contacts with other workers, and distribute findings that others could use or apply to further their work.

The other point, receiving a lesser amount of attention, centered around the question of just what people want in the way of recreation. For the most part people have not been consulted as to their recreational wants. Furthermore, people's wants in recreation tomorrow may be entirely different than they are today, making it hard to plan future wants on today's desires. Some people detest well planned and organized recreation, enjoying the element of discovery, whereas others seem to lack the curiosity, ambition, or plain desire to investigate any new form of recreational experiences. Can people be educated to enjoy different and diverse forms of recreation in accordance with necessary restrictions or limitations of facilities?

The important consideration is the effect of the recreation experience on the individual. If some method could be improvised to measure the value, results, or outgrowth of a recreational experience, perhaps over a long period of time, we could better adjust our recreational offerings to provide for the needs and wants of people.

Group 6. Discussion led by Robert McCabe and Raleigh Barlowe; summarized by Marian Deininger.

Although many other problems were discussed, including various interesting leads from a current study under the guidance of Professor McCabe of the impact of goose hunting on the local economy surrounding the Horican Marsh area, group six managed to list four problems in public outdoor recreation activities: (1) User control through the planned allocation of land to various recreational facilities, (2) user education and information, (3) extension of recreational seasons, (4) provision of facilities for retired people as a special type of recreation area user.

The first two of these received consideration in some detail; the latter two received only brief attention and are not elaborated here. Time also precluded formulation of specific research proposals, hypotheses, or designs. The suggestions are in the form of a series of questions.

I. The problem of user control gave rise to a fundamental question of value premises, desired ends, and perhaps philosophy:
    A. Should administrators and land managers have as their major responsibility users or the natural resource? It is to be hoped that research into the bases of judgments of professionals, users, and merchandisers might yield objective criteria usable in obtaining a "proper balance" between these two. This problem merits first priority. Other questions, the answers to which would yield evidence to help with the general problem of user control, include:
    B. What agencies should be responsible for what outdoor recreation activities? This question involves more than the delineation of "desirable" agency bailiwicks; it involves feasible, effective responsibilities, and some measure of acceptability by vocal, opinion-forming users and taxpayers.
    C. How can the quality of outdoor recreation be improved, assuming measures of "quality"?
    D. What priorities can be established for various outdoor recreation facilities? Regionally? State by state?
        1. Is camping a preferred outdoor recreational activity? If so, why? What are the socio-economic prestige factors in wilderness camping?
        2. Why does an individual continue his use of a given recreational resource? For what reasons does he vary his choice of resource use (activity)?
    E. What constitutes adequate spacing of outdoor recreation facilities? At what point of congestion, or lack of it, does the user object?
    F. What shall or should be the fee charged per unit of time for various facilities?

II. The problem of user education and information seemed to have second priority in our discussion, and led to such questions as:

A. What is the relative effectiveness of the use of various media and channels for informing and educating outdoor recreation users?
   1. Distribution of maps showing locations and types of facilities?
   2. Press releases reporting current available space at various locations?
   3. Relative effectiveness of the timing of space information?

B. What techniques and skills for educating outdoor recreation users about their forest, park, and wildlife resources are most effective?
   1. Is the blase acceptance of recreation area offerings the exception, or the rule?
   2. Have recreationists' attitudes, expectations, and perceptions of the recreation experience changed? How and why do they change?
   3. Can the goal be achieved by informing users of the range of outdoor experiences available to them to encourage genuine growth and development through various levels or kinds of such experiences? How can this goal be achieved?

CONFERENCE SUMMARY

by Samuel T. Dana[1]

The present conference has emphasized the broad scope and steadily increasing importance of outdoor recreation. It has identified many problems that need study and has demonstrated the need for research aimed at their solution along a broad front through the cooperative effort of investigators in many fields. One of the chief values of the conference has been the opportunity it has afforded for people with widely diverse backgrounds but with a common interest in outdoor recreation to get acquainted and to exchange views.

No summary can hope to do more than highlight some of the main problems that have emerged from our discussions. These may be grouped under the three headings of demand, supply, and policies and programs. In considering the situation in the Upper Great Lakes Areas, it may also be helpful to indicate briefly some of the studies which the Outdoor Recreation Resources Review Commission (ORRRC) has under way for the country as a whole.

Demand.--What are the present and future needs and wants of the American people for outdoor recreation? How many people now engage in fishing, hunting, picnicking, camping, boating, swimming, skiing (both on snow and on water), motoring for pleasure, and other forms of outdoor recreation? Where do they come from, and where do they go? How are they divided by age, sex, marital status, occupation, income, etc.? What quality and quantity of land and water areas are needed, by kinds of recreation, to provide satisfactory experiences?

ORRRC is studying these and related questions through surveys already made and still under way by the University of Michigan and the U.S. Bureau of the Census. These surveys obtain information not only on the activities of recreationists but also on their attitudes--why they do or do not like certain forms of recreation, and what influence they think recreation has on them as individuals and as members of the family, the organization with which they work, and the community in which they live.

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[1] Presidential Commissioner, Outdoor Recreation Resources Review Commission; and Dean Emeritus, School of Natural Resources, University of Michigan.

The survey by the Bureau of the Census will make contacts with 16,000 persons in all of the 48 contiguous states at four different times of year. The results will be statistically valid for the country as a whole and for major regions such as the Northeast, North Central, South, and West, but not for smaller regions such as the Upper Great Lakes Area. Here a good start has been made, but only a start. More uniform and more accurate methods are needed to determine not only the total number of people who engage in different kinds of recreation on lands and waters under different classes of ownership but also where they come from, what they are like (age, sex, occupation, financial status, etc.), why they came, and how they fared. There is urgent need for more intensive and more widespread research along these lines, with the cooperative participation of forest managers, sociologists, economists, geographers, and psychologists.

Because of the increasing concentration of population in urban centers, ORRRC is making a special study of the situation with respect to outdoor recreation in five metropolitan areas--the New York-New Jersey-Philadelphia region, the Atlanta region, the Chicago region, the St. Louis region, and the Los Angeles region. Each of these studies will deal with the influence of social, economic, and political developments on the demand for outdoor recreation, the current needs and preferences of the inhabitants of the region, the outdoor recreation facilities now available, anticipated future demands and supplies, and ways and means of meeting these demands.

The report on the Chicago region will be of special interest to the Upper Great Lakes Area. It should be studied carefully to learn how present and prospective attitudes, preferences, and activities of the Chicago population influence their use of the Upper Great Lakes Area for recreational purposes, and to determine what changes in policies and programs might modify that use to the advantage of the region. Similar studies of three other metropolitan regions--Detroit, the Twin Cities, and Duluth-Superior--and similar analysis of the results should be equally valuable in enabling the Area to meet more effectively the recreational needs of people in these tributary regions.

Future demands for outdoor recreation--qualitatively, quantitatively, and geographically--will be controlled by the many factors that influence these demands and that are constantly changing. ORRRC is therefore studying in considerable detail prospective trends in the demographic, economic, and social factors that will influence population, leisure time, income, transportation, and education, and that will in turn influence the demand for outdoor recreation in all of its many ramifications. Here again, the findings for the country as a whole will need to be analyzed and interpreted to determine how far they apply to prospective developments in the Upper Great Lakes Area. Research should then be initiated to obtain whatever additional information may be needed to identify for this particular area the probable influence on outdoor recreation of the many complex and interacting factors which are involved.

Supply.--What land and water resources are currently and prospectively available to meet recreational demands? As a major step toward answering this question ORRRC is making a detailed inventory of the location, size, ownership, physical characteristics, use and recreational opportunities for each major public outdoor recreation area in the country. A similar but less intensive inventory is also being made of the privately owned resources used by the general public for outdoor recreation.

As soon as these figures become available, they should be checked for accuracy so far as they relate to the Upper Great Lakes Area, and specific arrangements should be made for keeping them up to date. Of particular importance is a more complete study than will be made by ORRRC of the situation with respect to the resources in private ownership. It is essential to know how far these resources now are, and are likely to be, available for recreational activities of various sorts in order to estimate the extent to which further acquisition of recreational areas by public agencies is necessary. Research is also needed to determine the ability of one public agency--the county--to handle outdoor recreation effectively either on lands which it already owns or which it may acquire.

An important aspect of the supply problem is the relation of recreational uses both to other uses and to each other. To what extent is the production and harvesting of timber compatible or incompatible with such recreational activities as motoring for pleasure, hunting, fishing, picnicking, camping, and travel in the wilderness? How compatible are canoeing and motor boating, water skiing and swimming, snow skiing and enjoyment of the wilderness? Answers to questions such as these will vary with the character of the resources and their users, and will require research both in land management and in the social sciences. "Multiple use" is an attractive concept which is difficult of practical application in concrete situations, particularly since a combination of uses which is desirable today may become undesirable as conditions change.

Closely connected with the problem of multiple use is that of "carrying capacity." Under specific conditions of area and environment, what intensity of use will provide optimum returns, and what usage will result in diminishing returns? What are optimum returns, and how are they measured? How many people can be crowded on a picnic ground, or on a camping area, or in a wilderness before these areas begin to lose their physical, esthetic, or spiritual attractiveness? With the wide variety of environments and kinds of people concerned, it is going to take much research to find out. Seldom is it obvious what constitutes "the greatest good for the greatest number in the long run."

A number of resource evaluation studies under way by ORRRC will throw considerable light on certain aspects both of supply and demand. These studies include the place of wilderness in outdoor recreation; shoreline, beach and other water recreation resources and problems; present and future role of fishing and hunting in the United States; expanding the availability of recreation resources in areas of heavy population pressure; quality of recreation areas as evidenced by user satisfaction; and methods for evaluating recreation sites. The resulting reports should be carefully studied and supplemented by such further research as is necessary to provide the knowledge in these fields for the effective handling of outdoor recreation activities in the Upper Great Lakes Area.

Policies and Programs.--What action is needed to assure the most effective use of available supplies in meeting prospective demands? The discussions at this conference have made clear the belief of the participants that the provision of adequate outdoor recreation opportunities is a responsibility of all classes of owners and all levels of government. This agreement, however, leaves unanswered the basic question as to the character and extent of the responsibility which should be assumed by each class of owner.

The problem needs to be considered from the two points of view of philosophy and practice. What should the different kinds of owners do, and what are they doing? And in the light of pertinent beliefs and facts, what changes, if any, should be made in present policies and programs to achieve the best results?

Starting with private owners, the emphasis placed on recreation will naturally, and properly, be influenced by its compatibility or incompatibility with the major objective of ownership (whether it be farming, timber production, mining, or hydroelectric development), and by its contribution to profit or loss from the land-management enterprise as a whole. Research is needed to determine the attitude of private owners on these points, and how these attitudes find expression in present and prospective managerial practices. In other words, to what extent are private owners now meeting, and to what extent are they likely to meet, the recreational needs of the region?

How about municipalities and metropolitan regions? Should they be expected to provide recreation beyond their own boundaries, or is this a responsibility of the counties or the state? What is the present situation, and how can it be improved?

What obligations have counties to provide adequate opportunities for outdoor recreation, particularly in states like Minnesota and Wisconsin which have large areas of land in county ownership? Should counties with little or no land in county ownership go in for acquisition programs (if so, on what scale), or should they leave the job in whole or in large part to the state?

State responsibility in the field of outdoor recreation is recognized in all three of the Lake States, and there is strong pressure for the expansion of present programs. But how far should the expansion go in the purchase of additional land for recreational use, and should it be supplemented, as is the case in New York, by financial grants to local subdivisions of the state?

The federal government is making a substantial contribution to outdoor recreation in the Upper Great Lakes Area, largely through the national forests but also on a smaller scale through lands under the administration of the National Park Service, the Bureau of Sport Fisheries and Wildlife, and the Army Corps of Engineers. Except for the rounding out of the Boundary Waters Canoe Area, no further expansion of any consequence seems to be in sight. Is this a wise policy? Furthermore, is the national interest in outdoor recreation so strong that the government should make financial grants-in-aid to the states for the support of recreational programs at the state and local levels? If so, in what amounts, for what purposes, and under what conditions?

These questions all point to the need for thoroughgoing research to determine the present and prospective scope, character, and effectiveness of the activities of all classes of owners in meeting the outdoor recreational needs of the region. Such research should include the relation of recreational uses to other land and water uses, together with the possibility of increasing the yield of all resources through more intensive management. When the facts are in, much hard thought should be given to analyzing what they mean and to devising measures to meet the needs to which they point.

Policy problems and management problems are always closely related. In addition to deciding who should do what, consideration must be given to such matters as users' fees, the place of concessionaires, the layout and operation of recreation areas, and educational programs that will enable users to get the most out of their recreational experiences. We need to know more about the economics of recreation from the standpoint of the recreationist, the local community, the state, and the region; and we need to prepare and circulate material that will inform the prospective recreationist of the opportunities offered by the region in the way of outdoor recreation and will enable him to make the most of them.

Conclusion.--In conclusion, I should like to emphasize the fact that the urgent need for research in the field of outdoor recreation does not lessen the equally urgent need for action. We already know in a general way that prospective demand for recreational opportunities and facilities threatens to far outstrip the prsopective supply, and that prompt and drastic action is necessary to close the impending gap. We need much more information in many directions than we now possess, but we also know enough to do better than we are now doing both in policy and in practice. Research is the tool that will enable us to do increasingly better as pressures on limited resources mount.

As to the future, I suggest that the committee which arranged this conference continue to carry on, with whatever increase in size it may think desirable. Perhaps it would be helpful to include representatives from Wisconsin, Michigan, and Canada, and from other fields of activity. I also suggest that the committee take the leadership in attempting to stimulate a coordinated attack on some of the problems which have been discussed at this conference.

Finally, I hope that another conference can be arranged at an appropriate time, perhaps after the report of the Outdoor Recreation Resources Review Commission becomes available. Certainly the present meeting has been so stimulating that it should have many successors, but, for the present at least, without any formal organization.

SOME RECENT STATION PAPERS

Lake States Forest Experiment Station

Effects of Forest Cover on Soil Freezing in Northern Lower Michigan, by W. D. Striffler. Sta. Paper 76, 16 pp., illus. 1959.

Influence of Ownership on Forestry in Small Woodlands, by Charles F. Sutherland, Jr., and Carl H. Tubbs. Sta. Paper 77, 21 pp., illus. 1959.

Volume Tables for Aerial Timber Estimating in Northern Minnesota, by Gene Avery and Merle P. Meyer. Sta. Paper 78, 21 pp., illus. 1959.

Trends in the Wisconsin Charcoal Market, by John R. Warner and Burton L. Essex. Sta. Paper 80, 22 pp., illus. 1960.

Proceedings of the Lake States Forest Tree Improvement Conference, October 6 and 7, 1959. Sta. Paper 81, 60 pp., illus. 1960.

Michigan's Forest Resources, by Virgil E. Findell, Ray E. Pfeifer, Arthur G. Horn, and Carl H. Tubbs. Sta. Paper 82, 46 pp., illus. 1960.

European Pine Shoot Moth Damage as Related to Red Pine Growth, by H. J. Heikkenen and W. E. Miller. Sta. Paper 83, 12 pp., illus. 1960.

Streambank Stabilization in Michigan--A Survey, by W. D. Striffler. Sta. Paper 84, 14 pp., illus. 1960.

Pulpwood Production in Lake States Counties, 1959, by Arthur G. Horn. Sta. Paper 85, 13 pp., illus. 1960.

Evaluating the Growth Potential of Aspen Lands in Northern Minnesota, by R. O. Strothmann. Sta. Paper 86, 20 pp., illus. 1960.

The Climatic Distribution of Blister Rust on White Pine in Wisconsin, by E. P. Van Arsdel, A. J. Riker, T. F. Kouba, V. E. Suomi, and R. A. Bryson. Sta. Paper 87, 34 pp., illus. 1960.

The Forest Insect and Disease Situation, Lake States, 1960, by Gerald W. Anderson and Donald C. Schmiege. Sta. Paper 88, 18 pp., illus. 1961.

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